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Manufactures

Cotton-seed products in
foreign countries

Washington

1908

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DEPARTMENT OF COMMERCE AND LABOR

BUREAU OF MANUFACTURES

JOHN M. CARSON, CHIEF

COTTON-SEED PRODUCTS IN FOREIGN COUNTRIES

REPRINT OF
SPECIAL CONSULAR REPORTS

VOL. XXXIX

WITH AN APPENDIX



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1908

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IN THE SENATE OF THE UNITED STATES,

February 24, 1908.

Ordered, That there be printed for the use of the Senate, and be delivered to the Senate document room, 3,000 copies of a pamphlet issued by the Department of Commerce and Labor and entitled "Cotton-seed Products in Foreign Countries," and that the Secretary of Commerce and Labor be instructed to assemble and include in the publication reports from special agents and consular officers received since the said pamphlet was issued.

Attest:

2

CHARLES G. BENNETT,
Secretary.

B. 45.

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COTTON-SEED PRODUCTS IN FOREIGN COUNTRIES.

INSTRUCTIONS TO CONSULAR OFFICERS.

DEPARTMENT OF STATE,
Washington, January 7, 1907.

To the American consular officers.

GENTLEMEN: At the request of the Department of Commerce and Labor, you are instructed to prepare and transmit to this Department a report, in duplicate, on the use of American cotton-seed products in your district, which shall include replies to the following questions, viz:

1. Are cotton-seed oil and cotton-seed cake or meal used in the country in which you are stationed? If so, to what extent in pounds or gallons; in what shape; for what purposes; at what prices, and what are the aggregate quantity and value of the sales of each per year?
2. Are cotton-seed linters used? If so, for what purposes, and what is the aggregate quantity in pounds sold and for what value per year?
3. With what oils or greases does cotton-seed oil come in competition, such as olive, peanut, and other vegetable oils, edible tallow, butter, lard, etc.? What are the prices of each, and what are the aggregate annual quantity and value of the sales of each competing article?
4. With what articles does cotton-seed cake or meal come in competition, either as a feedstuff or as an ingredient of commercial fertilizers? What are the aggregate annual quantities and values of each such competing article?
5. Has there been an increase or decrease in the quantity imported of either of the cotton-seed products named in the country to which you are stationed, particularly in cotton oil? It has been pointed out that certain foreign countries whose people are large consumers of edible oils do not produce enough olive oil or any other kind of edible oil for their own uses, and that the shortage is made up by the importation of cotton oil or foreign olive oil. Give as full information relative to the consumption of edible oils and their production in the country in which you are stationed as can be obtained, stating whether or not there is a discrimination on the part of the Government against cotton-seed oil, and the cause of such discrimination if it exists.
6. Give any additional information that can be secured, and that may seem of value to the cotton-seed oil mills of the United States, regarding the use of each of the cotton-seed products above named.

The Department incloses, for your further guidance in making this report, copy of a letter addressed to the Chief of the Bureau of Manufactures, Department of Commerce and Labor, by Mr. F. H. Bailey, president of the Interstate Cotton-Seed Crushers' Association, of Paris, Tex., dated December 22, 1906.

I am, gentlemen, your obedient servant,

HUNTINGTON WILSON,
Third Assistant Secretary.

COTTON-SEED PRODUCTS IN FOREIGN COUNTRIES.

ITALY.

DISTRICT OF MILAN.

EXTENT TO WHICH MIXING IS PRACTICED—COMPETITIVE PRODUCTS—IMPORTS, CONSUMPTION, AND DISCRIMINATION.

Consul James E. Dunning, of Milan, furnishes a comprehensive report in which the relation of American cotton-seed oil to Italian olive oil is fully explained. The consul says that Italian olive oil for both wholesale and retail home trade contains from 5 to 50 per cent of cotton-seed oil, and that the latter comes in competition with the former as well as with edible tallow, butter, lard, oleomargarine, peanut and flaxseed oils. The opinion is expressed, however, that no "loaded" olive oil is exported to the United States. There has been a large increase in the quantity of cotton-seed oil imported into Italy. Spanish and French olive oils are also imported when the Italian oil crop falls short. It is declared on official authority that domestic Italian olive oil is diluted with American cotton-seed oil, and that this is done in the first instance to give the product a brilliant yellow color, and later by middlemen to pad the output. Consul Dunning's report, which was written under date of February 23, 1907, will be found valuable to those interested in the trade, and informative to the general reader. The report follows:

1. Are cotton-seed oil and cotton-seed cake or meal used in the country in which you are stationed? If so, to what extent in pounds or gallons; in what shape; for what purposes; at what prices, and what are the aggregate quantity and value of the sales per year?

Cotton-seed cake and meal are not used within the range of inquiry exercised by the Milan consulate, and the Government statistical tables on file in the office show no importations whatever.* Cotton-

* According to United States official statistics there was exported to Italy in the fiscal year ended June 30, 1906, 23,610 pounds of cotton-seed cake and meal, valued at \$255.

seed oil, however, is an important article of import, of which the consulate records show the following movement:

Year.	Quantity.	Value.	Average per pound.
	<i>Pounds.</i>	<i>Dollars.</i>	<i>Cents.</i>
1904.....	9,417,100	536,988.72	5.7
1905.....	26,353,569	1,862,883.91	5.7
1906.....	9,256,368	388,764.72	4.2

It is easily observable, without extended analysis of the above table, that 1905 was a short year in the Italian olive orchards. The importation of cotton-seed oil made a strong advance. The United States cotton-seed oil market must have supplied practically all of the deficiency, since reference to the general import statistics for the year 1905 shows that the total importation of all fixed oils for that year was only about 100,000 pounds from all the Continental markets, France and Spain included. This point will be further discussed in the consideration of question 5.

HOW COTTON-SEED OIL IS USED.

Cotton-seed oil is used in Italy for two purposes, (1) for diluting olive oil, and (2) for sale as an edible substitute for olive oil at a price lower than that commanded by the native product. The consulate is unable to determine accurately the proportionate extent of these two uses. All discussions of this phase of the case must of necessity be general, the Italian oil industry being singularly lacking in definite statistical data, and such data as is obtainable, like practically all European commercial information, being subject to large errors in publication. Without encroaching upon the consideration demanded by the terms of question 5, the following propositions may be stated:

(a) In 1905, which was a year of unusual demand for foreign assistance to pad the short Italian output of olive oil, the importations of cotton-seed oil amounted to about 10 per cent of the total home consumption of olive oil and to about 6 per cent of the total amount of olive oil produced, consumed, and exported. In 1906, an average year for foreign importations and for the Italian olive crop, the purchases of cotton-seed oil amounted to about 34 per cent of the total Italian home consumption of olive oil and about 5 per cent of the total amount of Italian olive oil produced, consumed, and exported, this last total amount including all Spanish and French olive oil imported into Italy to be mixed with native oil and exported out of Italy therewith. Not all of this importation of cotton-seed oil was used for the dilution of olive oil, because there is in Italy a large consumption of pure but unrefined olive oil. Thousands of peasants maintain a few trees, even as far north as the Italian lakes, and press the olives with their feet, using the oil for cooking and the residue for feeding to their cattle. Large quantities of this unrefined product (*olia cattiva*) are used for burning in cheap lamps. Some of it is used in lubricating machinery. A large amount is consumed in cooking among the poorer classes at the south, and indeed throughout the peninsula.

The proportionate quantity of olive oil so consumed is unknown; but it is relatively large, on account of the habit of all Italians south of the Apennines of cooking everything in a liberal bath of oil.

LOWER GRADES OF OLIVE OIL.

There is a middle grade of olive oil, sold in the principal markets for kitchen consumption. Above that is the first grade for the top domestic market and the best export trade. The consulate has no reason for supposing that the "loading" of olive oil with cotton-seed oil is confined to the export grade, or even that that process is much in vogue in the preparation of that quality. In the absence of proof either way the consulate would infer, and as an inference only, that most of the "loading" takes place in the preparation of the middle-grade olive oil, which is largely for European consumption. The matter will be again referred to in the more extended discussion allowed by the terms of question 5.

(b) Cotton-seed oil as such is used in its second application in the Italian market for sale in bottles or in bulk for cooking purposes. It is in some favor among the poorer classes of the population on account of its wholesome appearance, its superiority to the low grades of olive oil, and its low price, which runs from 4½ to 6 cents per pound, as against 6½ to 9½ cents per pound for olive oil at wholesale; while a good grade of cotton-seed oil can be bought in the Milan shops at retail, and is so bought in large daily sales for kitchen use by the poorer classes at 11 cents per pound retail.

2. Cotton-seed linters are not used within the range of the Milan consulate.

COMPETING PRODUCTS.

3. With what oils or greases does cotton oil come in competition, such as olive, peanut, and other vegetable oils, edible tallow, butter, lard, etc.? What are the prices of each, and what are the aggregate annual quantities and value of the sales of each competing article?

Cotton-seed oil comes in competition in Italy with olive oil, flax-seed oil (i. e., linseed), an apparently insignificant quantity of peanut oil, fish oil, butter, oleomargarine, tallow and lard, oil of sesame, and a variety of fixed oils and fats. The market in these lines is uncertain and fluctuating, and the Milan consulate has not enjoyed direct touch with some of the important centers of the various trades involved. Careful study of such evidence as it has been able to collect has, however, led to a table of average quantities and values intended to answer the explicit inquiries stated in question 3. It should be understood that the table is the result of an effort to establish a mean estimate of the volume of the trade without reference to any one year. In reaching the averages both "lean" and "fat" years have been eliminated by reduction to the common level which the consulate has sought to establish. The prices are average Milan prices, and in every case in which there was some minor question as to mean, year-around scale, the high rather than the low price has been stated, in order that American exporters and others may not be deceived by too pleasant a prospect. The amounts are slightly approximated, in order to present the easier review which can be given to round numbers.

The Italian market, therefore, may be stated thus as related to oils, fats, and greases of all kinds, prices being wholesale, f. o. b. Milan:

AVERAGE ANNUAL QUANTITY AND VALUE OF OILS AND GREASES SOLD IN ITALY.

Articles.	Price per pound.	Quantity.	Value.
	Cents.	Pounds.	Dollars.
Olive oil.....	81	312,650,000	26,054,166
Butter.....	21	75,152,000	15,781,920
Lard.....	123	273,570,000	33,659,860
Oleomargarine.....	10	3,020,000	302,000
Tallow.....	12	31,508,000	3,780,960
Pork fat.....	101	2,475,000	250,000
Other fats.....	51	64,400,000	2,992,000
Oleic acid.....	49	3,108,000	155,000
Stearic acid.....	8	1,050,000	87,700
Acid fats.....	54	440,000	22,800
Cocoa butter and oil.....	91 to 14	2,191,900	250,836
Linseed oil.....	5 to 7	29,541,940	1,928,726
Sesame oil.....	91	6,385,000	604,010
Palm oil.....	78	.....	.....
Rape-seed oil.....	71	.....	.....
Fish oil.....	6	3,674,000	220,440
Total.....		800,162,840	90,880,398
Cotton-seed oil.....	42	9,256,303	388,765

* Animal fats.
 † Acid fats solidifying above 40° and at less than 48° F.

* Included with cocoa.
 † Included with linseed.
 ‡ In 1906, an average year.

TREND OF THE TRADE.

The foregoing table is made purposely general to illustrate the trend of the entire trade in Italy. A trifle less than one-ninth of the sales indicated are supplied by imports. To show the average relation between home production, exports, and imports, as a basis for home sales, the following table will be found to contain the approximate figures, made up from official estimates compiled by the consulate with all possible care.*

RELATION OF HOME PRODUCTION TO IMPORTS AND EXPORTS OF OILS AND GREASES.

Articles.	Home production.	Imports.	Exports.
	Pounds.	Pounds.	Pounds.
Olive oil.....	440,000,000	24,500,000	151,850,000
Butter.....	88,000,000	852,000	.....
Lard.....	264,000,000	9,680,000	110,000
Oleomargarine.....	3,520,000	.....	.....
Tallow.....	31,500,000	.....	.....
Pork fat.....	.....	2,640,000	155,000
Other fats.....	55,000,000	.....	600,000
Oleic acid.....	5,500,000	.....	2,000,000
Stearic acid.....	2,300,000	.....	130,000
Acid fats.....	.....	440,000	.....
Cocoa butter and oil.....	.....	2,351,900	9,500
Linseed oil.....	29,530,000	.....	110,000
Sesame oil.....	.....	.....	.....
Palm oil.....	.....	.....	.....
Rape-seed oil.....	.....	3,740,000	66,000
Fish oil.....	.....	.....	.....

* Including amount pressed from imported seeds.

Some latitude must be allowed in the presentation of these figures, on account of the total lack of accurate official statistics. They are, however, set down with the concurrence of opinions obtained from supposedly competent authorities in Milan.

Discussing the terms of the foregoing table, it may be stated that when the Italian olive crop is short, the olive-oil market recruits itself for the most part from Spain, with France as second choice. Other countries supplying olive oil to Italy are Tunis, Turkey, Greece, and Austria-Hungary, in the order named. The United States is the chief source of supply of other fixed oils, other countries drawn from being Austria, Great Britain, and France; but the combined importations of other fixed oils from all other countries is less than one-fiftieth of the importation from the United States, American cotton-oil shipments explaining the great difference.

SOURCES OF SUPPLY.

Stearic acid is imported from Holland, France, Germany, Belgium, Austria-Hungary, and Great Britain. Fats of sundry kinds are imported from the United States, South America, Great Britain, France, Belgium, Austria-Hungary, India, and Australia. Seventy-six hundred tons of fats were imported from Argentina alone in 1906—15,200,000 pounds. The average importations of fats of all kinds (excluding acid fats) may be studied in the following table:

Whence imported.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons.	Tons.	Tons.
North America.....	1,046	3,633	5,747	6,640	6,808
South America.....	10,238	6,258	9,244	10,457	7,618
Great Britain.....	3,010	3,310	5,839	6,583	7,350
France.....	2,235	2,350	5,214	2,596	2,560
Belgium.....	717	109	286	138	450
Austria.....	256	241	154	129	150
India.....	636	68	30	251	86
Australia.....	.....	249	.....	114	157
Other countries.....	874	844	841	632	505

SEED CAKE OR MEAL.

4. With what articles does cotton-seed cake or meal come in competition, either as a feedstuff or as an ingredient of commercial fertilizers? What are the aggregate annual quantities and values of each such competing article?

Cotton-seed cake or meal would come in competition, in Italy, with flaxseed, rape seed, and olive waste, principally as a feedstuff, and very little as a fertilizer. The use of this sort of stock in commercial fertilizers in Italy is insignificant, and the trend is not in that direction. As feed for animals, cakes of flaxseed and of rape seed are extensively used. The use of olive waste has been going on for many years, and efforts are now on foot to develop it on a scientific basis in the Department of Agriculture. Italy has four crops of hay a year, so that hay for feed is abundant at all seasons.

The annual consumption of all kinds of seed cakes in Italy is estimated by the Ministry of Agriculture, Industry, and Commerce¹ at 110,000,000 pounds annually, valued at \$1,200,000, or a trifle over 1 cent per pound. Italian statisticians do not at present interest themselves in the details of this business, so that it is impossible to present in accurate tabular form the itemized annual quantities and

¹ Annali d'Agricoltura, Rome, 1905.

values of each competing article concerning which information is sought by the cotton-oil mills of the United States. There is a sizeable export out of Italy of oil seeds and cakes, amounting at present to about one thirty-fifth of the importation thereof. The slant of the trade, however, may be observed in the following tabular statement, compiled by the consulate after a study of the records filed in the Royal Italian Institute of Agriculture at Milan, with a view to determining the flow of imports of this class into the country. The figures represent averages of imports of oleous seeds of all varieties.

IMPORTS OF OLEOUS SEEDS INTO ITALY: 1881-1906.

Year.	Imports.	Value.	Value per pound.
	Pounds.	Dollars.	Cents.
1881-1885.....	77,597,520	(b)	(b)
1886-1890.....	105,242,820	(b)	(b)
1891-1895.....	109,728,740	(b)	(b)
1896-1900.....	110,109,780	(b)	(b)
1901.....	135,586,240	4,089,641	3
1902.....	133,025,500	4,011,314	3
1903.....	165,449,800	4,619,634	2.8
1904.....	163,925,306	4,789,381	2.9
1905.....	142,092,280	4,154,209	2.9
1906.....	125,101,760	3,735,052	3

* General average for the five years. * Value not given. * Slightly approximated.

FEEDS AND FERTILIZERS.

The foregoing table is an interesting illustration of the awakening of Italy's agricultural interests a quarter century ago to the important part to be played in the country's welfare by a proper study of feeds and fertilizers. And the decrease in imports of oleous seeds for feed stock which appears with the year 1904 is the initial sign that agricultural economy was beginning to teach the value of waste materials. Imports fell off because they were needed in a lesser degree; and this movement is still in progress as more productive methods are devised for the application of otherwise useless residue.

To break up these figures still further into such details regarding the use of oleous seeds for feed stuff in Italy as the consulate has been able to obtain, the following table, compiled from the trade summaries filed in the consulate itself, is of direct bearing on the terms of question 4 as to imports of oleous seeds:

Seeds.	1903.	1904.	1905.	1906.
	Pounds.	Pounds.	Pounds.	Pounds.
Flax and rape.....	72,517,720	68,136,430	78,993,840	76,767,760
Sesame and arachide.....	65,347,740	40,660,720	39,440,280	25,432,000
Castor.....	25,128,500	26,927,120	22,897,500	22,198,000
Others.....	1,458,800	1,150,040	972,180	704,000
Total.....	155,449,800	163,925,306	142,300,900	125,101,760

Flaxseed is imported in great quantities from India, whence one Milan company brought 8,140,000 pounds during 1906; and India likewise furnishes nearly all the seeds of castor, sesame, and arachide. Russia and Argentina, however, both ship good quantities of flaxseed

into Italy, and the balance of the supply comes from Turkey, Egypt, China, and France. The home production of flax is about 41,800,000 pounds annually.

CONSUMPTION OF OLEOUS SEEDS.

It is impossible to determine with even approximate accuracy the volume of the trade in oilseed cakes used for feed stuff. The exports from exceed the imports into Italy; and there is no way of forming any intelligent estimate of the home consumption, such as can be reduced to a tabulated summary. It is true, however, that a relatively small part of the oleous seeds used in Italy is made into meal and cakes for direct feed for live stock, nearly the entire importation being used in the extraction of oil. The residue of the pressing process is available as feed stuff, and using the quantity of such residue as a base, it is proper to make certain deductions of a nature entitled to reasonable respect.

Reference to the records of the Institute of Agriculture at Milan indicates that in Italy it is fixed that 1 quintal, or 220 pounds, of oleous seeds will render from 48 to 55 pounds of oil, and allowing for loss of impure and ultimate waste matter, 154 pounds of substance is available for cakes—that is, Italian experience has justified the expectation of the following result from the pressing of oleous seeds:

	Pounds.
Amount of seed.....	1.00
Result in oil.....	.25
Result in feed.....	.70
Result in waste.....	.05
	1.00

By a study of the production, imports, and exports of oleous seeds it appears that a net quantity of 164,000,000 pounds thereof was pressed in Italy in the year 1906. Using the above proportion as a basis, the home consumption of oilseed material available for cakes and meal in Italy in 1906 works out thus:

	Pounds.
Net quantity of seed pressed.....	164,000,000
Proportion of feed material.....	.70
Total quantity resulting.....	114,800,000
Total quantity exported.....	4,800,000
Net quantity for home use.....	110,000,000

These figures are essentially approximate, and they are presented with all due hesitation on that account. They are, however, computed on the system used by the highest Italian agricultural authorities, and may be accepted on that ground with a fair amount of confidence. Naturally, as the critical reader has probably observed, the consulate has made no separate allowance for the product of oleous seeds raised in Italy itself. The domestic supply, however, is moderate at present. It is increasing slowly, but some day will have to be reckoned with. Taking it all together, at its utmost, it may be roughly stated at a total of 39,000,000 pounds annually, this amount

* Production plus imports.

figuring in reaching the original estimate of 110,000,000 pounds as the approximate amount of seed cakes and meal used for feed stuff in Italy annually.

BRAN AS FEED STUFF.

No account has been taken of bran, which, in sundry mixtures, is much used in Italy as a feed stuff, though, as a matter of course, not in the class with oil-seed cakes and meal. Bran is, however, much more important as a feed stuff in Italy than cakes are, and is held to contain 14 per cent of albuminoids and from 3 to 5 per cent of fats. Great frauds have been practiced with various mixtures of bran, it having been a habit in some provinces to mix with it old bread refuse and corn husks, much to the damage of the stock to which it was fed. Bran is well thought of as a hog feed, but recent researches have developed some disastrous results among swine stock on account of a residuum of fine sand which had been put into the mixture.

The residuum of the rice trade is also put to use as a feed stuff, in a small quantity. Statistics of the use of these two articles are not available.

ITALIAN CROP INADEQUATE.

5. Has there been an increase or decrease in the quantity imported of either of the cotton-seed products named, * * * particularly in cotton oil?

There has been a general increase in the quantity of cotton-seed oil imported into Italy from the United States, and the prospect for further development in the trade is excellent. There is no trade worth tabulating in seed cakes and meal, and at Milan the outlook for them does not appear particularly promising. This would all depend upon comparative prices, however, and the question is not one which can be intelligently answered (that is, this phase of the general question) outside the United States.

Italy is peculiarly a country "whose people are large consumers of edible oils," who do "not produce enough olive oil or any other kind of edible oil for their own uses," and "the shortage is made up by the importation of cotton oil or foreign olive oil." It is obvious that a proper answer to this query will throw open the entire case of adulteration and mixture.

Italy does not fully supply herself with edible oils. Even in good seasons for the olive orchards, like 1906, considerable purchases of olive oil are made in Spain and France. Lined oil is purchased in the usual markets. But the best source of supply for Italy is the United States. Cotton-seed oil is the principal foreign edible oil used in piecing out the inadequate Italian product. In this way it has a perfectly legitimate use. It is sold in the markets, quoted in the trade journals, and recognized generally as a wholesome substitute for olive oil in short seasons, and a useful low-price article for those classes of the population which live on a few pennies a day. The American cotton-seed oil of average quality undersells and is vastly superior to the low grades of olive oil at the tag end of the Italian crop.

Naturally, in particularly short years like 1905, the Italian market draws abnormally upon the American supply of cotton-seed oil. The

increase is explained not by the attempt of the Italian shippers to adulterate their export olive oil with cotton-seed oil, but by the demand of the home Italian market for a good edible oil at a low price. That demand the American cotton-seed oil answers with special satisfaction. The demand is gradually growing. It is right to expect that the trade will increase in all average years, and that in "lean" years for the Italian olive crop the draft upon the American cotton-oil market will be heavy. A glance at the table on page 14 will afford the best possible illustration of this phase of the case. Short crops are bound to occur in Italy every few years, while the prospect for the general normal trade in cotton-seed oil is promising in the extreme.

IMPORTATIONS IN DETAIL.

A detailed examination of the importations of edible oils in an average cycle of Italian years discloses the following proof of the foregoing argument, which may be thus tabulated, showing importations of edible oils in pounds:

OIL.	1903.	1904.	1905.	1906.
	Pounds.	Pounds.	Pounds.	Pounds.
Olive.....	34,501,000	27,666,840	30,878,980	5,500,000
Cotton.....	8,079,280	9,417,100	26,355,560	9,255,000
Flax.....	945,760	673,830	479,080	470,000
Others.....	270,820	169,560	208,780	200,200
Total.....	45,891,860	37,922,940	87,922,900	15,425,200

This is the most striking evidence in the possession of the consulate at Milan to show the reliance placed by the Italian market on American cotton-seed oil as a substitute for the native olive product. The argument given point thereby is rendered of more practical weight in the consideration of the second aspect of the question under discussion—that is, the method by which such substitution is effected.

SUBSTITUTION AND ADULTERATION.

The adulteration of Italian olive oil by the use of American cotton-seed oil, and the substitution, both open and otherwise, of cotton oil for the native product in short years and at other times, is unquestionably a fact. In the opinion of the Milan consulate this adulteration and this substitution do not extend to the export trade. In other words, all the evidence collected on this point by the consulate, and its volume is not inconsiderable, indicates that Italian olive oil exported to the United States is entirely free from adulteration and that it is the true and genuine product it appears to be. Every variety of independent inquiry instituted by the consulate—all without the knowledge of the exporters and manufacturers of the olive oil—leads to the irresistible conclusion that the Italian oil exporters may very frankly be freed from every insinuation and suspicion on this part of their trade. The adulteration and substitution are done in Italy for the domestic market.

While the consulate is unwilling to say that all Italian olive oil used in the home market is diluted with cotton-seed oil—there being no sort of actual proof thereof—it is true that careful tests made by oil manufacturers in Italy have shown that 5 per cent of cotton oil can be injected into olive oil without affecting the color of the latter or altering the taste appreciably. It is held in an authoritative quarter to which the consulate has had access that olive oil loaded with 5 per cent of cotton adulteration will not respond to the tests for detecting the presence of the adulterant. It seems apparent that a very large quantity of the best Italian olive oil sold in the home markets contains this quantity of cotton-seed oil. Indeed, it is regarded as true in the olive-oil trade that American cotton oil is the best aid to rendering ordinary olive oil clear in color—that is, it is a favored process among some manufacturers to take dark olive oil and add cotton oil until the mixture produces the brilliant yellow color demanded by the “fancy” trade.

It has been further demonstrated in the Milan market that olive oil loaded with from 30 to 40 per cent of cotton oil maintains its color and substance, even when left standing, and that the adulteration is not visible to the ordinary eye. Whether or not the possession of this interesting knowledge is taken advantage of by the Italian manufacturers and middlemen, the consulate leaves the American reader to infer.

COTTON-SEED PREFERRED TO LOW-GRADE OLIVE OIL.

It is regarded as improper in the first-class trade to load olive oil with more than 40 or 50 per cent of cotton oil, as when that proportion is reached the adulteration is visible to the eye.

It is the habit, according to the repeated statements of Milan oil handlers, to place cotton oil in bulk in the smaller cities and towns and sell it, either straight or slightly mixed with second-grade olive oil, as olive oil. It must be remembered that a great deal of second-rate olive oil (*olio cattiva*) is sold in Italy to the lesser trade. American cotton oil is so greatly superior in appearance and wholesome flavor to this inferior stock, and its price is so attractive, that substitution is rendered specially easy. Indeed, it seems probable that by gradual stages the cotton oil will be sold in increasing quantities as such, in preference to the lower grades of olive oil. The market in this respect is good, and can be developed.

PURE OIL SHIPPED TO AMERICA.

The consulate is aware that it has left open a quite decisive question, which might be stated in these terms: If Italian export olive oil can be loaded with 5 per cent of cotton oil without fear of detection by test, what proof can be advanced to sustain the consulate's opinion that no Italian oil so loaded is shipped to the United States? It must be admitted that there is no proof now at hand, and that to support its opinion the consulate would be obliged to enter into a long and considerably aimless discussion of inferences not valuable to the purposes of this report. One of the less unstable reasons set up by

the consulate is the fact that even at its utmost, the supply of American cotton-seed oil is not now sufficient to furnish such an immense quantity of adulterant as would be called for if the Italian shippers were carrying their loaded stock into the export trade. That is, at the present stage of the trade it would appear to be true that home adulteration is carried on to an extent sufficient to take up all the cotton-seed oil not required for straight sales as such.

MIDDLEMEN AND RETAIL TRADE.

The foregoing sections of this report have, as a matter of course, dealt with prices as of the general wholesale markets for quantities in bulk. As affording light on the retail trade as that trade is directed by the middlemen, the following list of prices will be of interest, because it is supplied by a typical Milan dealer to a private inquirer and presents the middleman's price list for oils:

PRICES OF OILS ON MILAN MARKET.

Kinds of oil.	Per pound, Per 220 pounds.	
	Cents.	Dollars.
Cotton seed	8	17.60
Olive:		
Extra	141	32.00
Fine	123	27.86
Ordinary	111	24.98
Sesame:		
Extra	114	25.96
Fine	111	24.88
Ordinary	101	22.46
Flax, edible	8	17.60
Rape, edible	10	22.00

These prices are for the oils in quintal lots and not less. Oils of these respective qualities sell at retail by the kilogram (2.2 pounds) at from 18 cents per pound for extra olive oil to 11 to 12½ cents per pound for cotton oil.

The consumption of edible oils and their production in Italy, suggested as a part of question 5, is fully answered in the foregoing sections of the report, and with particular detail in the tables on pages 14 and 16.

NO DISCRIMINATION IN CUSTOMS RATES.

There is no discrimination on the part of the Italian Government against American cotton-seed oil. In fact, the Italian Government is committed to special consideration for such importations. The Italian general tariff provides for a duty of 24 lire, about \$4.63, per quintal (220 pounds) of cotton oil, plus 14 lire, or about \$2.70, per quintal, which is a manufacturing tax applicable alike to imported and domestic oil; the total general Italian tariff duty on cotton-oil importations is thus about \$7.33 per quintal, or about 3½ cents per pound. Under the terms of Article II, however, of the treaty of reciprocity with Italy, dated Washington, February 8, 1900, the United States secured from the Government of Italy an agreement that, on

account of certain considerations, the Italian duty on cotton-seed oil from the United States should not exceed 21.50 lire per quintal, about \$4.15, which is a trifle less than 2 cents per pound. This rate (to which is added the manufacturing tax of 14 lire per quintal) is allowed under a series of treaties to every country excepting Spain, and is governed by the need of cotton oil during years when the Italian crop of olives is short.

CAKES AND MEAL.

6. Give any additional information * * * that may seem of value to the cotton-seed oil mills of the United States regarding the use of each of the cotton-seed products named.

Two propositions are apparent from a review of the situation in Italy as observed from Milan: (1) The trade in cakes and meal can be developed to the advantage of the American exporters; and (2) much can be done under the tariff as it now stands to increase the sales of American cotton oil as such in Italy—that is, not as an imitation olive oil or as an adulterant therefor.

(1) The Italian agricultural interests are fully alive to the importance of artificial feedstuffs, and are doing everything in their power to encourage their use. The Government has placed its interest on record. "There is no reason to doubt," says a recent official publication, "that the consumption of cakes and meal of oleous seeds and of all concentrated auxiliary foods for live stock will greatly increase in Italy."

Great stress is laid by the Government, and by private persons interested in the matter, on the need of some such feedstuffs, the quality of which can be absolutely assured. It is recognized that here, as in the case of commercial fertilizers, there are unusual opportunities for fraud. Probably that knowledge has contributed something definite to the slow progress of these articles in Italy. At present there is manifest a considerable distrust of imported cakes on account of the suspicion that they are likely to contain base matter dangerous to the cattle eating them.

The best Italian authority declares that it does not encourage the use of seed cakes and such materials unless they come from the pressing of seeds which had an original degree of purity of 95 per cent and were carefully cleaned before being submitted to process; which contained no toxic substances; which contained not more than 2 per cent of earthy substances, and which were in good condition, well dried, and showing no signs of mold.

KIND OF CAKES USED.

Cakes now used in Italy are of two classes—made either of the direct residue of oil extraction mixed with a small quantity of seeds, or of other mixtures of these residual masses mixed specially as feedstuffs under more or less exact and scientific conditions. The more complex mixtures are of course those which offer the greatest opportunity for adulteration with dead-waste matter. So far, therefore, the Italian authorities appear to have favored legislation which would demand a complete guaranty from dealers as to the character

* Annali d'Agricoltura, 1905, p. 85.

and condition of the oleous seeds from the residue of which the cakes were made. Undoubtedly such legislation may be expected in the form of laws which will demand the frankest kind of a declaration to show to the buyer the true value of the feed he purchases; in other words, a pure-feed law. Cakes of ground turf mixed with cheap molasses are not entirely unknown in Italy.

VALUE AS FEEDSTUFF.

"The value as a feedstuff of a seed cake," says one of the short reports issued from the Ministry of Agriculture, Industry, and Commerce on the subject, "when it is in good condition of preservation and contains no poisonous substances, depends on three essential constituents: The albuminoids or proteids, the fats or oils, and the carbohydrates, especially in the form of sugar, starch, and digestible cellulose. In different feeds the same constituents are not equally digestible. Thus in cakes about 75 per cent is digestible, while only from 50 to 70 per cent can be so considered in green feed. In cakes and in meal of the oleous seeds the alimentary value depends upon the proportions of the albuminoids and the oils contained therein. Thus, a satisfactory cake of linseed should contain not less than 27 per cent of albuminoid, together with a minimum of 10 per cent of oils. A cake containing less than that proportion of each could not command a market price or afford the necessary guaranties of quality."

The consulate quotes this report to show the likelihood that a campaign of introduction undertaken on behalf of American cakes and meal would meet a strict chemical analysis at the start. In fact, the most competent Italian authorities are strongly urging the passage of laws on this point patterned on the Belgian legislation of 1896.

MOST FAVORED SEED CAKES.

Cotton-seed cakes and meal are not under direct suspicion, which has so far been directed entirely against linseed stock. "In fact," says an official who has gone deep into the question, and whose work has been carefully reviewed by the consulate in the preparation of this report, "the manufacture of artificial linseed cakes, containing an infinitesimal portion of true seed residue, has been practiced on a large scale." And it is reported at the experiment station in Milan that in several cases under test so-called linseed cakes were found to contain a considerable quantity of raisin seed and grape dregs, evidently the junk of Italian factories.

The most favored seedcakes in Italy appear to be those made from the linseed imported from Bombay. However, in a somewhat extended remark on the general demand for seedcakes as feed stuff in Italy an officer of the Ministry of Agriculture said not long ago: "Cotton-seed cakes, which have a particular yellow color, contain a very high percentage of albuminoids and do not offer themselves easily to adulteration."

QUALITY OF CAKES CRITICISED.

Some complaint has appeared at Milan from time to time in relation to small importations of cotton-seed cakes from Egypt and Bombay, and particularly that the latter were not sufficiently cleaned of

cotton fibers. Indian cakes are also criticised because they appear to be frequently in poor condition, to be on the verge of mold, and to have been "braced" with borax as a preservative. Shipments of seedcakes from the United States have been criticised, as late as 1905, because they have frequently been found to contain fragments of metal thrown off by the pressing machinery of such proportions as to render the cakes fatal in the feeding of cattle. Another criticism of the American cotton-seed cakes is that certain toxic substances accumulate in the cotton fibers, which are not always well winnowed from the body of the cake, and that they are specially dangerous to young animals. In a word, the entire attitude of the Italian market toward American seedcakes is one of insistent demand that the stock offered for sale here be proved by every available test to be wholesome feed for cattle.

A NEW COMPETING ARTICLE.

A new feed stuff which will compete with American and other seedcakes, if its use can be made practical under the strict requirements of the Government experts, is the waste of the olive pressing. To determine the value of this waste material the most careful experiments have been carried on by Dr. Flaminio Bracci, director of the experiment station at Spolete. Previous efforts in the same direction were brought to a halt by the difficulty of eliminating the debris of the olive seed, which was dangerous for the feeding of cattle, and gave unpleasant results even when fed to swine. The amount of the material available, however, was singularly attractive from a pecuniary point of view, and Doctor Bracci began his studies with a determination to discover some way of effecting, as he himself is reported to have called it, "a boneless feed stuff." He believes that he has succeeded. "I have created," he said in a recent report to the Government, "a new industry, the importance of which is exactly proportioned to that of the Italian olive crop."^a

According to Doctor Bracci's report, analysis gives the following result in an average quantity of tested olive waste:

	Per cent.
Fats	11.63 to 18
Gross protein	11.50 to 11.68
Nonazotes	22.41 to 41.38
Gross fiber	19.16 to 24.12
Digestible proteins	5.77

It is estimated that the total amount of olive waste available for reduction to feed stuff is 1,540,000,000 pounds annually, and that the rial can be profitably extracted from this immense mass of waste, itself is reckoned to have, prior to rendering for the market under the Bracci method, a theoretical value of a little less than 1 cent per pound. In other words, Doctor Bracci believes that there is in the olive waste of Italy \$15,000,000 worth of good feed for stock. If it is true that more than 75,000,000 pounds of digestible proteid material can be profitably extracted from this immense mass of waste, Italy will be able to more than supply herself with her own feed stuff of this character. Comparisons on this line may be made by reference to the answer to question 4, page 15, of this report.

^a Bulletin Mensuel de la Chambre de Commerce Française, Milan, December, 1906, p. 1103.

Doctor Bracci proposes to enrich the olive waste by mixing it, after reducing it to a pulp and rendering the digestible material, with meal of ground beans and of corn.

There are in the whole of Italy 18,732 oil-pressing works, using 17,016 horsepower and employing 72,463 people. The somewhat peculiar ratio of horsepower to number of factories is explained by the fact that many of the so-called "works" are small farm establishments where one or two are employed who do the pressing with their feet.

SALE OF COTTON OIL MAY BE EXTENDED.

Much can be done under the tariff as it now stands to increase the sales of American cotton oil as such in Italy; that is, not as an imitation olive oil or as an adulterant thereof. Prejudice would have to be overcome, but there is plenty of proof that cotton oil is already being consumed in immense quantities by people who do not know they are using diluted or substitute oil. There is, as a strong basis for further developing this trade, the existing demand for American cotton oil, which has become nearly indispensable to the Italian market. It will, unless prevented by legislation which is not now in prospect, always serve as an adulterant for olive oil. The consulate believes that its sales as a straight product, on its merits alone, can be largely increased by the use of intelligent and active methods. The Italian market is already familiar with advertising campaigns intended to exploit olive oil for cooking in place of butter and oleomargarine.

Large quantities of olive oil, and of linseed oil as well, are used in portions of Italy for burning in lamps, this grade selling at from 11½ to 13½ cents per pound, in quantities of 30 to 350 pounds. "For preserving the eyesight," says the catalogue of an enterprising Milan oil merchant who deals in this class of illuminant, "all the oculists warmly recommend the light given by olive oil to persons who write or work at night."

CULTIVATION OF COTTON.

It is of interest to note that Italian authorities are endeavoring to raise a cotton crop in the African colony of Eritrea, and that, though no great progress has been made as yet, the outlook is regarded as promising. Italian capital in South America is also interested largely in an effort to produce a cotton crop from which to supply the Milan mills. Good advances are reported, and a statement received at the consulate says that as many as 20,000 bales have been marketed. This is a hint of what may be expected in the future in this industry.

AVERAGE ANNUAL OUTPUT OF OLIVE OIL.

A supplemental report, dated April 9, received from Consul Dunning includes a tabular statement issued by the Italian authorities, showing olive-oil production in Italy for the past five years by provinces. There is a discrepancy between the Italian figures and those of the consul, the former placing the average annual production of olive oil for the past five years at 590,000,000 pounds, which

is 150,000,000 in excess of the quantity stated by the consul in the table printed on page 14. The following is taken from the official statement and shows the average annual quantity of olive oil produced for the five-year period ending with the calendar year 1906:

AVERAGE ANNUAL PRODUCTION OF OLIVE OIL, 1902-1906.

Province.	Quantity.	Province.	Quantity.
	<i>Pounds.</i>		<i>Pounds.</i>
Lombardy.....	1,014,200	Adriatic provinces.....	162,118,000
Venice.....	849,200	Mediterranean provinces.....	172,614,000
Liguria.....	23,541,100	Sicily.....	128,278,200
Emilia.....	858,000	Sardinia.....	12,217,200
Umbria.....	31,267,720	Total.....	590,174,420
Tuscany.....	46,235,200		
Lazio.....	30,586,600		

ROME.

ADULTERATED OIL FOR SOUTH AMERICA.

Consul-General Hector de Castro, of Rome, confirms the statement of other consular officers that cotton-seed cake is neither manufactured in Italy nor imported from America. His report is dated March 16. It follows:

There is an annual importation of nut and other seed cakes amounting in the aggregate to 2,960 tons, valued at about \$76,000, principally from Austria and France, which are used as fodder. These imports are about stationary and have not materially changed in the last few years. There is no duty on imported nut or seed cakes. Cotton-seed oil is imported to the extent of some 6,650 tons annually, valued at \$863,000, of which 5,400 tons are from the United States. Of the 6,650 tons 4,300 remain in Italy and the rest is reexported as or mixed with olive oil, mostly to South America. As there is a duty of \$41.49 per ton on cotton-seed oil, exclusive of octroi, the adulterating operations are carried on in the bonded warehouses. In addition to the custom-house duty, there is an octroi duty of \$24 per ton on any vegetable oil and on fat entering Italian cities.

No cotton-seed oil linters are used in Italy and no imports thereof figure among the statistics of Italian imports.

PER CAPITA CONSUMPTION OF OLIVE OIL.

Cotton-seed oil would come in natural competition with olive oil, which is one of the most important products of Italy and of which the annual average production is about 217,000 tons. It is one of the principal articles of food. The annual average consumption per capita is figured at 6 quarts. The country produces enough for home consumption and may always draw in case of failure of crop the necessary amount from the neighboring countries—Spain, Greece, and the Mediterranean Islands. Italy imports on an average annually 21,000 tons of olive oil and exports some 40,000 tons. Olive oil sells at about \$1.24 per gallon first quality and \$1.10 per gallon second quality. This is the price in the cities and includes the octroi

tax. In the country and outside of the city boundaries the price would be \$1.12 and 98 cents, respectively.

There are no available statistics showing the consumption of lard and butter. The first sells at from 12 to 14 cents per pound and the second at 22 cents per pound.

There appears to be no demand for cotton-seed cake or meal, and very little for other similar cakes or meals; it is therefore not a question of competition, but perhaps one of education. A market for cotton-seed cake or meal may therefore be created if the advantages of the article be established. The olive-oil cakes are generally used for fuel in the course of the manufacture of the oil itself, and also as fertilizers.

CUSTOMS DUTIES.

The duty on imported olive oil is \$28.95 per ton, plus an octroi duty of \$24 per ton if brought into the cities. On cotton oil the import duty is \$41.49 per ton, exclusive of octroi. Besides this discrimination, there is the prejudice of the people against cotton-seed or any other vegetable oil in substitution for olive oil. It is not likely, therefore, that cotton-seed oil as such would find a ready market in Italy as an article of food so long as olive oil is plentiful.

The duty on oleous seeds ranges from \$9.17 to \$11.58 per ton; it would therefore seem more advantageous to import the seeds rather than the oils.

VENICE.

IMPORTATIONS REGULATED BY OLIVE CROP.

Consul Paul Nash writes, on February 19, that cotton-seed oil is imported into Venice in greatly varying quantities, according to the production of olive oil in Italy. The consul says:

In 1904-5 some 35,000 barrels were imported because of the scanty olive crop in this country, whereas in 1905-6 only about 7,000 barrels reached Venice direct. So far this season's importation amounts to nearly 11,000 barrels, and the prospects are that in spite of the high prices prevailing at present a fair amount of business will be done, the quantity and quality of last autumn's olive production being considerably below the average. A certain unrecorded quantity of cotton oil, both pure and already mixed with olive oil, reaches other parts of this district overland, and as a great part of the amount coming direct to this port goes out of the district it is impossible to estimate the local annual consumption with any degree of exactitude. Lack of statistics makes it equally impossible to state the consumption of any of the other edible oils, butter, lard, etc. The current prices for cotton oil as quoted in the newspapers range from 85 to 94 liras (1 lire = 19.3 cents) per metric quintal (220 pounds), including the usual estimate of 42 liras for duty and expenses. Calculating 1.1 liras per kilogram, this gives us a price of about 57 to 63 cents per gallon.

As far as I can learn there is no cotton-seed meal consumed in this district, but some experiments have been made with oil cake for feed-

ing cattle, and excellent results have been obtained. It is said that with lower prices a good business could be done in this article. I am also informed that high prices prevent the use of linters by the Venetian cotton mills, and there is at present no importation.

COMPETITIVE PRODUCTS.

Cotton oil comes in competition first of all with olive oil, for which the current wholesale prices are, per gallon: Common, 70 to 71 cents; middling, 79 to 81 cents; fine, 85 to 88 cents; superfine, 95 cents to \$1.05; oil of sesame, 73 to 76 cents; coconut, 70 to 72 cents; linseed, 53 cents (comestibly used in Lombardy), and peanut oils, as well as butter, 20 to 28 cents, and lard, 10 to 11 cents, also compete with it, although to a lesser degree. Oil cake as food for cattle would have to compete with copra cake from the oil mills of Genoa, which sells there at \$1.60 per 100 pounds. Pulp from the beet-sugar factories, selling on the spot at about 5 cents per 100 pounds, is very extensively used for this purpose and is said to produce good results. Other cake, such as sesame, olive, and linseed are used to a very limited extent, the last named, of course, only for fattening. As an ingredient in the manufacture of fertilizers there seems to be no competing article in the same class, although in certain parts of Italy olive-oil mill refuse is sometimes used in its pure state for fertilizing. The materials employed in the local factories are mineral and bone phosphates, nitrate of soda, sulphate of potash, dried blood, etc.

DEMAND FOR OLIVE OIL EXCEEDS SUPPLY.

There can never be any fixed rate of increase in the importation of cotton oil, depending as it must upon the size and quality of the olive crop, but even under the best conditions Italy can not produce edible oils enough for home consumption plus the demand for Italian olive oils abroad. There is a natural discrimination on the part of the Government against cotton oil, for the protection of the olive industry, and for the same reason the duty on foreign olive oils has been increased. A certain amount of refined corn oil has been imported of late for comestible purposes, and as it has been hitherto considered as belonging to the class of inedible oils it pays a very much smaller duty than cotton oil. It is probable, however, that if the importation of this article should reach any considerable degree of importance the duty upon it will be increased to the amount now levied on the cotton product.

MESSINA.

FOREIGN OILS NOT USED.

Consul Charles M. Caughy reports that cotton-seed products are not used in the Messina district. Writing March 8, he says:

The olive oil produced, although of an inferior quality to that of upper Italy and the French Riviera, is always at least sufficient in

quantity for home consumption, and very little oil from other parts of the Kingdom can be found in the shops. I have never heard discussed the question of the importation of foreign oils. There are here three houses only which make a specialty of refining and exporting the best grades of Messina and Calabria edible oils. The bulk of the exportation consists of very common grades and is consumed mostly by the Sicilians in America.

FRANCE.

VOLUME AND VALUE OF THE TRADE.

IMPORTS AND EXPORTS—COMPETITION AND PRICES—PROPOSED ADVANCE IN DUTIES.

Consul-General Frank H. Mason, writing from Paris, March 29, reports that the three leading products of cotton seed, viz, oil, cake, and "linters"—the fiber obtained by reginning cotton seed—are all materials of important utility in various French industries and agriculture. The consul-general continues:

The following statistics of import, export, and consumption in each category have been condensed from official publications, the records of the Paris Chamber of Commerce, and from the books of leading dealers in cotton-seed oil and cake. All statistics of this kind in France are in kilograms, which in solids mean 2.2 pounds each, or 2,204 pounds avoirdupois per 1,000 kilograms or metric ton, and in liquids 100 kilograms equal 26.41 gallons, or 264.17 gallons per metric ton. The total importations of cotton-seed oil into France during the ten years from 1896 to 1905, inclusive, were as follows:

IMPORTS OF COTTON OIL INTO FRANCE, 1896-1905.

Year.	From United States.	From England and other foreign countries.	From French colonies.	Total net weight.
	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>	<i>Kilograms.</i>
1896.....	20,198,971	8,562,510	.....	28,761,481
1897.....	42,940,560	10,097,116	.....	53,037,676
1898.....	85,061,832	6,141,777	.....	91,203,609
1899.....	64,096,510	2,895,759	.....	66,992,269
1900.....	41,447,728	3,962,886	.....	45,410,614
1901.....	57,219,748	1,969,640	.....	59,189,388
1902.....	24,312,257	1,749,568	.....	26,061,825
1903.....	17,936,278	1,930,887	.....	19,867,165
1904.....	19,738,993	1,666,838	.....	21,405,831
1905.....	37,447,343	1,258,833	.....	38,706,176

These totals differ from the French official statistics, because they show the net amount of oil imported, whereas the published tables give the gross weight, in which the cask or other package is included. For purpose of comparison the following resumé of the cotton-oil

imports of 1905, with countries of origin, is given from the official published record. The figures represent gross weight in kilograms:

United States.....	42,910,411
Great Britain.....	1,140,787
Egypt.....	83,052
Algeria.....	432
Other countries.....	58,978
Total.....	44,194,560

The foregoing was valued at 27,400,627 francs, equivalent to \$5,288,321. Of this total supply 2,307,059 kilograms were reexported, and the remainder, 41,887,501 kilograms, or 1,586,122 gallons, were consumed in France.

The duty on cotton-seed oil imported into France is 7.20 francs (\$1.39) per 100 kilograms net weight, and the present wholesale market quotation is 72 francs, or \$13.89, per 100 kilograms, and \$138.96 per metric ton of 264.17 gallons.

The average wholesale price of prime summer yellow cotton-seed oil, in bonded warehouse, duty not paid, during each of the past ten years, 1896 to 1905, inclusive, was as follows per 100 kilograms:

Year.	Price per 100 kilos.		Year.	Price per 100 kilos.	
	Francs.	Dollars.		Francs.	Dollars.
1896.....	44.25	8.54	1901.....	57.75	11.13
1897.....	44.50	8.59	1902.....	66.00	12.83
1898.....	44.50	8.59	1903.....	65.00	12.54
1899.....	41.00	7.91	1904.....	61.50	9.55
1900.....	44.40	8.19	1905.....	45.75	8.82
	58.75	11.32			

USES FOR COTTON-SEED OIL.

Cotton-seed oil is used in France mainly for three purposes, namely:

(a) For making oleomargarine, compound lard, and other edible fats, for which purposes from 9,000,000 to 10,000,000 kilograms are consumed in an average year.

(b) For mixing with olive oil and other vegetable oils to make edible oils which are used for salads and in cooking.

The law of France forbids the sale of adulterated olive oil, and although the best grades of cotton-seed oil are clean, odorless, nutritious, and wholesome, the admixture of cotton-seed with olive oil is, legally considered, adulteration of the latter. To what extent the law is violated it is of course impossible to definitely ascertain, but it is well known that an admixture not exceeding 30 per cent cotton-seed with 70 per cent olive oil is exceedingly difficult to detect, and the fact that large quantities of American cotton-seed oil are consumed in the olive-growing districts of France would indicate that much of it is used for that purpose. American cotton-seed oil is the purest and finest that is imported to this country, and it is practically all eaten either in the form of edible fats, or for cooking and salad oil in the south, and for salad oil in the north of France.

(c) For making soap. Very little American cotton-seed oil is used in this country for soap making, for the reason that it is of too high quality and consequently too costly to be used for that purpose. English oil, made from Egyptian and Indian cotton seed, crushed at Hull, is imported to France and used for soap making because its rank unpleasant flavor excludes it from competition with the American product for edible purposes. The other most important soap-making material is peanut oil from the Coromandel coast.

COMPETING OILS AND PRICES.

The other oils with which American cotton-seed oil comes into direct competition in France are as follows: For edible purposes: Olive oil, sesame oil, poppy-seed oil, walnut oil, and arachide or peanut oil from the west coast of Africa. Copra oil, made from the dried meat of coconuts, is used both for edible purposes and for soap, while peanut oil from Madras, palm oil, and the lowest grade of olive oil are also used for soap making.

The prices of some of these competing oils, according to present quotations, are as follows:

Arachide or peanut oil, Rufisque extra, 90 to 92 francs per 100 kilograms net (ex. warehouse Marseille). (Franc=19.3 cents.)

Arachide or peanut oil, Gambia surfine, 85 francs per 100 kilograms (ex. warehouse Marseille).

Sesame oil, Jaffa extra, 95 to 98 francs per 100 kilograms net.

Sesame oil, India extra, 85 to 90 francs per 100 kilograms net.

Sesame oil, India surfine, 84 to 85 francs per 100 kilograms net.

Oleo-stearine, 112 francs per 100 kilograms net.

As nearly as can be ascertained the annual consumption of edible oils in France is about as follows, the quantity of each varying slightly from year to year:

	Kilograms.		Kilograms.
Olive oil.....	20,000,000	Copra oil.....	15,000,000
Peanut oil.....	30,000,000	Cotton-seed oil.....	30,000,000
Sesame oil.....	30,000,000	Total.....	125,000,000

The use of cotton-seed oil for cooking purposes is increasing rapidly, not only in France but in Italy and other European countries. Besides its steadily increasing employment as an element of margarine and compound lard, it is extensively used for frying fish, potatoes, doughnuts, and other forms of food, and for these purposes has the economic advantage over olive oil that it may be heated over and over many times, whereas olive oil turns black and acquires a disagreeable taste after having been heated and cooled twice. The high price of butter and lard and the general increased cost of living throughout Europe compels the utmost economy on the part of working people in all expenditures for food. The result has been a steady increase in the use of oleomargarine and compound lard.

France is one of the foremost countries of Europe in the manufacture of oils from various oleaginous seeds, and is therefore an important producer of seed cake and meal. Among these raw materials, nearly all of which are imported, cotton seed holds an important place. The following statistics from the French official figures will show the origin and quantities of cotton seed imported during two average recent years, namely, 1903 and 1905:

IMPORTS OF COTTON SEED INTO FRANCE, 1903 AND 1905.

Countries.	1903.	1905.
	<i>Kilos.</i>	<i>Kilos.</i>
Egypt.....	20,398,274	26,742,284
British India.....	8,899,238	6,734,764
Haiti.....	151,000	1,891,435
Turkey.....	104,000	1,319,053
United States.....		219,683
Colombia.....		25,400
Russia.....	214,469	
Great Britain.....	458,919	13,997
Other countries.....	678,412	
Total.....	30,658,300	36,434,296
Value in francs.....	4,597,995	5,831,987
Value in dollars.....	887,279	1,125,678

Add to this the enormous importations of arachides, palm nuts, copra, and other oil-producing materials and it becomes easy to understand why the importations of oil cake are in general less than the exports of the same products.

The total importations and exports of seed cake and meal of all kinds from and to all countries during the past three years, and the portion of such imports which was contributed by the United States, are shown by the following table:

Year.	Imports.	Imports from United States.	Exports.
	<i>Kilos.</i>	<i>Kilos.</i>	<i>Kilos.</i>
1903.....	126,097,000	21,730,811	142,742,490
1904.....	132,455,800	19,884,918	157,496,300
1905.....	147,414,927	26,862,834	154,636,249

The above figures, showing importations from the United States, cover almost exclusively cotton-seed cake, though a small quantity of corn cake was likewise included, but they are sufficient to show that thus far American cotton-seed cake and meal have found only a limited market in France.

It will therefore be of interest to see the origin of all imports to and destination of all exports of seed cake and meal of all kinds from France during the average year. Taking for example 1905, the comparison is as follows:

IMPORTS AND EXPORTS OF SEED CAKE AND MEAL, 1905.

Countries.	1905.	Countries.	1905.
	<i>Kilos.</i>		<i>Kilos.</i>
IMPORTS.		EXPORTS.	
United States.....	26,742,284	United States.....	727,978
Russia.....	65,746,980	Sweden.....	7,530,976
Denmark.....	131,800	Norway.....	418,800
Great Britain.....	14,620,057	Denmark.....	10,659,160
Germany.....	886,820	England.....	8,880,458
Belgium.....	34,405,614	Germany.....	83,100,604
Switzerland.....	174,859	Belgium.....	23,276,612
Spain.....	1,608,193	Switzerland.....	10,267,463
Italy.....	117,095	Italy.....	305,397
Egypt.....	1,247,470	Other foreign countries.....	1,335,042
Romania.....	203,000	Algeria.....	2,367,724
British India.....	453,997	Island of Réunion.....	153,000
Uruguay.....	181,260	Tunis.....	829,758
Argentina.....	727,979	Other French colonies.....	278,260
Other foreign countries.....	97,778		
French colonies.....	419,875	Total.....	154,636,249
Total.....	147,464,927	Value in francs.....	23,195,497
Value in francs.....	22,119,739	Value in dollars.....	4,476,719
Value in dollars.....	4,269,110		

The products with which cotton-seed cake comes into most direct competition in this country, either as feed for stock or as an ingredient of commercial fertilizer, are linseed, sesame, peanut, poppy seed, and copra cakes, all of which, as has been shown, are largely produced in France. All these are fed to domestic animals and are exported for the same purpose to Denmark and other countries.

LINTERS.

The cotton-spinning industry of France is concentrated mainly in the northern provinces, particularly in and about the cities of Lille, Arras, and Tourcoing, in the consular district of Roubaix. Paris spins little or no raw cotton, and the consumption of linters in this district is therefore unimportant. From information furnished by the American consul at Roubaix it appears that the annual consumption of American linters in the north of France ranges from 6,000 to 8,000 bales, and the importation and use of that material are steadily, though slowly, increasing.

Linters, like other raw cotton fiber, are free of duty, and the price varies according to quality from 28 to 38 francs per 100 kilograms—that is, from 2½ to 3½ cents per pound avoirdupois. These are the lowest warehouse rates at the port of entry. In smaller quantities, at inland points, linters sell for 4 to 5 cents per pound when staple cotton is worth 11 cents.

Linters of the best grades can be spun into coarse yarns, which are woven into various fabrics for upholstery, tapestry, carpeting, etc., and for such uses are said to be satisfactory. The lower grades are used in making bedquilts and mattresses, as a substitute for wool, etc.

The principal port of arrival for linters is Havre, but some are imported through Marseille. They are not separately classified in import statistics from raw cotton.

PROPOSED INCREASE OF DUTIES.

The one cloud that overhangs the future of American cotton-seed products in France is the threatened advance of the import duty on oil from the present rate of 6 francs per 100 kilos gross (\$1.15), or 7.20 francs per 100 kilos net weight, to a minimum of 14 francs (\$2.70) and a maximum rate of 25 francs (\$4.32) per 100 kilograms. This proposition, which was formally introduced in the Chamber of Deputies on December 7, 1906, is opposed by the importers and consumers of cotton-seed oil in this country. If enacted in its present form cotton-seed oil imported from the United States would become subject to the maximum rate of duty. In the opinion of interested experts, American cotton-seed oil could stand the advance to the proposed minimum rate, which would apply to imports from other countries, but the maximum rate assessed upon American cotton-seed oil would greatly restrict, if not practically prohibit, its use in this country for edible purposes.

BORDEAUX.

DECREASE IN IMPORTATIONS.

Consul D. I. Murphy reports from Bordeaux, under date of April 3:

The importation of cotton-seed oil into Bordeaux from the United States has greatly fallen off in the past few months, the decrease amounting probably to 75 or 80 per cent. The few large dealers here complain of the present high price of the oil, one of them having informed me that the best offer he received during the first week of April from New York was 65 cents per gallon for an inferior grade, no premier quality having been offered.

The imports of cotton-seed oil from the United States into Bordeaux, according to custom-house figures, for the past seven years were as follows:

IMPORTS OF COTTON-SEED OIL INTO BORDEAUX, 1900-1906.

Year.	Quantity.	Approximate value.
	Gallons.	Dollars.
1900.....	57,763	23,105.20
1901.....	138,886	75,354.40
1902.....	273,162	114,728.04
1903.....	278,746	119,860.78
1904.....	291,955	132,254.75
1905.....	468,559	234,279.50
1906.....	409,000	204,500.00
Total.....	1,970,171	904,832.67

In the year 1905 the price of peanut oil (the principal competitor of cotton-seed oil) averaged higher than the price of the latter; hence the large importation of that year.

Cotton-seed oil is extensively used here, the "winter yellow" as a salad oil among the poorer classes and the "summer white" as the basis of compound lard and oleomargarine. French law forbids the sale of compound lard unless it is properly marked and labeled "Graisse alimentaire." Oleomargarine is not permitted to be sold in the same shop where butter is exposed for sale. In the retail shops cotton-seed oil is known and sold under various names—"huile de graine," "huile à manger," "huile comestible," "huile blanche"—but never as "huile de coton;" and I find upon inquiry that the consumers appear to be well satisfied with the oil—with its flavor and its wholesomeness.

The sales of cotton-seed oil in Bordeaux in the year 1906 amounted to 343,334 gallons, representing about \$171,667. Now that the price has risen so high, peanut oil seems to have supplanted it and practically taken its place in the market.

MEAL, CAKE, AND LINTERS.

I can not find that cotton-seed cake, meal, or linters are known to the trade here or used for any purpose. Peanut cake, however, is largely made and sold here, being esteemed a wholesome food for cattle. The average annual quantity manufactured in Bordeaux for the past five years was about 16,000 tons, representing a yearly average value of \$494,080. The prevailing price at this time (April 3) is about 1½ cents per pound, wholesale. Sesame cake is also considered a good cattle food in this region. The annual sales have averaged for the past five years about 1,500 tons, the yearly value of which was \$40,530. The wholesale price now is about 1¼ cents per pound. Walnut cake, poppy-seed cake, rape-seed cake, and linseed cake are not sold in this district to any extent.

COMPETING OILS.

The most dangerous competitor of cotton-seed oil is peanut oil, the ordinary grades of which are now actually the cheaper of the two.

These grades are selling at about 60 cents per gallon, while an inferior grade of cotton-seed oil is quoted at 65 cents. It may be put down as certain that the prices of the two oils being equal, or nearly so, people here will prefer peanut oil, probably because they know it better and because it is largely manufactured here. The African peanut crop of the past season was very large, although I am informed some of it was injured by unusual rains in the growing sections.

Enormous quantities of peanuts are imported here—last year over 50,000 tons. In Bordeaux there are three immense establishments where the nuts are pressed, the average yearly output of oil for the past five years having been 12,000 tons, the average yearly value of which was \$2,084,400. The demand for peanut oil is invariably brisk and more could be sold if it were possible to make more.

The finest quality of peanut oil is selling here for 82 cents per gallon. This oil is preferred by many consumers to the best olive oil. It is as sweet, as palatable, and as wholesome as the latter. The

only objection that can be urged against it is that it is liable to become rancid after three or four months. Its sale in Bordeaux largely exceeds that of olive oil, and, like cotton-seed oil, it is never sold under its own proper name at retail, but as "huile douce," "huile pure," "huile superieur," "huile comestible," etc.

PEANUT, WALNUT, AND SESAME OILS.

Peanut oil was exported to the United States from Bordeaux to the amount of \$115,220 from January 1, 1901, to December 31, 1906, as shown by the consular records.

Walnut and sesame oils are also, in a measure, competitors of cotton-seed oil, but in this part of France the quantity sold is not considerable. In this region oil is seldom used in domestic cookery, butter and lard being almost exclusively employed. In other localities along the Mediterranean and in the north of France olive, peanut, walnut, and sesame oils are used. Formerly lower down on the coast cotton-seed oil was largely used by the packers for the cooking of sardines before packing them in olive oil, but as it left a slimy, whitish deposit on the fish, and because of the high price, its use has been almost entirely discontinued, and peanut oil has superseded it and other oils. Neither peanut nor olive oils leave any deposit on the fish, but the former whitens the flesh and the latter gives it a slightly yellowish color.

OLIVE OIL.

There are a number of grades of olive oil, differing in color and flavor and in the degree of clarification, selling April 1 from 93 cents to \$1.40 per gallon. The finer grades of olive oil have not a great sale here, only people of very cultured tastes caring to pay the price asked for it. In fact, I find but little prejudice in favor of olive oil, the ordinary consumer apparently caring but little for the various names under which his oil is sold. If it is of good flavor, reputed wholesome and healthful, he is satisfied, without inquiring closely whether he is getting olive, peanut, cotton-seed, or other oil.

The finest grades of olive oil come from the vicinity of Nice, on the French Mediterranean coast, and are monopolized by two or three business houses in Bordeaux, their principal competitors in buying from the growers being one or two London perfumery manufacturers, who use it in their hair preparations. This particular oil really has no appreciable taste and would not appeal to the ordinary consumer. Before putting on the market it is allowed to rest in vats at an evenly cool temperature and filtered many times through fine-carded cotton.

There are many intermediate grades and varieties between this highest grade of olive oil and the inferior grade, selling now at 93 cents per gallon. It is not giving away a secret to state that the occasional shortage of the French oil crop is made up by the importation of other oils, notably those from Tunis, Italy, and Spain. And it is known that shortages have been made up by some of the growers by the liberal use of peanut oil, made here and at Marseille, and cotton-seed oil imported from America.

It is impossible to state the exact amount of olive oil brought to Bordeaux, for the Octroi records group all oils under two heads, i. e., "Vegetable and animal oils" and "Mineral oils." Under the former head the records show that in 1906 there were received in Bordeaux 303,259 gallons, and under the latter 798,481 gallons. Among "Vegetable and animal oils" must be included olive oil from the Mediterranean coast and from foreign countries, peanut oil manufactured in Havre and Marseille, walnut, sesame, and other edible oils.

To give yearly values is quite impossible. The records of the consulates show that in the past six years (i. e., January 1, 1901, to December 31, 1906) olive oil exported to the United States from Bordeaux was valued at almost \$2,000,000.

BUTTER AND LARD.

Of other competitors of cotton-seed oil, there were sold in Bordeaux during the year 1906, 1,390,786 pounds of butter, at an average wholesale price of 32 cents per pound, or \$445,051.

Lard to the amount of 505,853 pounds was sold, at an average price of 14 cents per pound, or \$70,813. There were also made and sold here in the same year 3,200,000 pounds of compound lard (graisse alimentaire), at an average price of 8½ cents per pound, a total of \$280,550. The present price of this article is 10½ cents per pound.

Of oleomargarine, about 500,000 pounds were sold here in 1906, at an average price of 9½ cents per pound.

There is a large establishment here where compound lard is made, and I was informed there that formerly they used over 200 barrels of American cotton-seed oil per month in its manufacture. Now, because of the high price of cotton-seed oil, they use peanut oil exclusively.

Of oleomargarine, as nearly as I can ascertain, there were sold about 500,000 pounds in Bordeaux in 1906, at prices ranging from 8½ cents for ordinary to 10½ cents per pound for first quality, wholesale.

TARIFF DUTIES.

Cotton-seed oil's principal competitor, peanut oil, has one great advantage, i. e., it is not subject to tariff duties. As the peanuts are imported from Senegal, over which there is a French protectorate, no tariff meets them at French ports, and the oil being pressed from them here is not taxed. Walnut and sesame oils are likewise favored, both being manufactured here. Cotton-seed oil, on the contrary, has to meet a duty of 6 francs per 100 kilos, gross.

The principal importers of cotton-seed oil in Bordeaux are Ph. Bouchard & Co., No. 12 Cours du Chapeau Rouge; Ducat & Marchow, No. 20 Cours d'Alsace-et-Lorraine, and Gelos-Didot, No. 19 rue Marengo.

HAVRE.

CONSUMPTION IN THE NORMANDY DISTRICT.

Consul Alphonse Gaulin, of Havre, under date of April 11, furnishes the following report on the cotton-seed products trade of northwestern France:

The imports of cotton-seed oil entered for consumption at Havre during the last three years were: 4,080 metric tons (metric ton=2,204 pounds) in 1904, 5,295 in 1905, and 6,674 in 1906. About 30 per cent of the quantity imported remained in this consular district, which comprises the greater part of Normandy, parts of Brittany, and of the old provinces of Anjou and Maine. The rest was distributed in Paris and vicinity and in the north of France. There is only an insignificant quantity of cotton seed crushed in this section of the country and practically no consumption of cotton-seed oils other than American oil.

Until the year 1905 at least 60 per cent of the cotton-seed oil used in this district was white summer oil, imported by the local manufacturers of compound lard. During the season of 1905-6, however, prime yellow winter oil, owing to the high prices of edible peanut oils, was shipped in larger quantities than white oil, and it looked as if it had secured a permanent foothold and that the demand for it would increase indefinitely. But the poor quality of this season's crop has proved to be a serious check, and white oil has, for the time being, regained its former supremacy. During this season the off grades have been imported in small quantities for soap-making purposes, but this is an exceptional case. So long as the prices of linseed oil remain at their present level there will be no permanent market in this district for those grades. Yellow summer oil has also been used of late to a very limited extent, but this is an equally exceptional condition of affairs. There is very little business done in white winter oil. It is used only in the drug trade, and the average yearly imports do not exceed 200 barrels. There are no imports of crude oil.

PREJUDICES AND PRICES.

White summer oil is used exclusively in the manufacture of compound lard, the annual production of which averages in this district from 1,000 to 1,250 tons. Prime yellow winter oil is used both as salad oil and as cooking oil. It is generally mixed with the lower grades of olive, peanut, sesame, and poppy-seed oils and sold under the greatest variety of names, but very rarely as cotton oil. It will be found in liter or half-liter bottles bearing labels of an indefinite and noncommittal nature, such as "huile comestible" (edible oil), "huile à frire" (cooking oil), "huile blanche" (white oil), "huile à salade" (salad oil), etc. Cotton oil, as such, however, is beginning to be favorably known, and it may be said that in the city of Havre there exists but little prejudice against it. The prejudice is much stronger in the country towns, especially in the departments of Calvados and La Manche. In view of the different grades of oil imported and of the mixtures in which they enter, the difficulty of giving even an approximate estimate of the aggregate value of the cotton-seed oil trade in this district is more than apparent.

The prices of cotton-seed oil in Havre follow the course of the American market. It therefore goes without saying that they are much higher this season than during the corresponding period of last season. The ruling prices of the different grades per 100 kilograms (220.46 pounds), duty paid, in Havre on March 29, 1907, and on March 29, 1906, were as follows:

PRICES OF COTTON-SEED OIL AT HAVRE, 1906 AND 1907.

Grade.	Price per 100 kilos.	
	March 29, 1906.	March 29, 1907.
	Dollars.	Dollars.
Prime yellow summer oil.....	12.54	15.63
White summer oil.....	13.31	17.94
White winter oil.....	13.60	18.23
Prime yellow winter oil.....	13.31	17.17
Off grades.....	12.44	13.89

Compound lard has consequently risen in price and is now selling at from \$19.50 to \$20.45 per 100 kilograms.

CLASSIFICATION OF CAKE.

The French customs statistics include all the different kinds of oil cake under one head, and it is therefore impossible to state accurately the quantity of cotton-seed oil cake and meal imported into this district. Local merchants, however, estimate it at between 3,000 and 4,000 tons. Whatever is imported is used as feed stock, mixed with other kinds of fodder.

The ruling price of cotton-seed cake and meal in Havre on April 8, 1907, was \$3.18 per 100 kilograms, and the average price during this season from \$3.38 to \$3.47. There is no cotton-seed cake used in this district as a fertilizer, the chief obstacle in the way being its price, which is considerably higher than that of the colza and other oil cakes.

LIMITED USE OF LINTERS.

Cotton-seed linters are used to a limited extent in France and are imported almost entirely through the port of Havre. Being included with raw cotton in the French customs statistics, there are no official figures indicating the quantity of these importations, but leading Havre cotton merchants are of the opinion that there are between 700 and 1,000 tons used in France every year. The Havre firms sort out the linters and offer them to the trade in three different grades. The prime quality contains linters taken from middling fair to good middling cotton, and sells at an average of \$7.72 per 50 kilograms (110.23 pounds). It is used in the manufacture of cotton for anti-septic dressing and of shoddy goods.

The second quality is taken from fully middling to low middling cotton. It sells at \$4.82 per 50 kilograms. It is used for packing for machines and in the manufacture of felt hats. The third quality is taken from ordinary and lower grades of cotton. It sells at \$2.31 per 50 kilograms. It is used in the making of artificial eiderdown for bedquilts and for weather strips. The second quality has the largest

sale, the best not being readily obtainable. Part of the linters are purchased by the local and Rouen spinners, but the bulk goes to the cotton manufacturers of the eastern sections of the country.

COMPETITORS OF COTTON OIL.

The edible oils mostly used in this district are peanut (made from uncorticated arachides imported from the West Coast of Africa) and sesame oils, both of which are frequently mixed with the lower grades of olive oil. Next in importance, from the standpoint of quantity sold, are the higher grades of olive oil and "oeillette" oil, the latter being made out of a variety of the poppy seed grown in the north of France. "Oeillette" and the best grades of olive oil are the most expensive oils in the market, and are therefore purchased only by the well to do. The sales of cotton-seed oil are probably only slightly inferior to those of the last two mentioned oils. Other oils are undoubtedly sold in this market, but they are mixed with some of those already mentioned and the labels fail to reveal their existence. The law of August 1, 1905, relating to fraud in the sale of merchandise provides against the use of deceptive names on labels and trade-marks, and it is prohibited, for instance, to sell arachide and cotton-seed oils under the name of olive oil, but a mixture of the same oils may be sold under any name which will not lead the purchaser to believe that he is buying pure olive oil or pure arachide oil, etc. The ingredients of the merchandise need not be designated on the label if the label is not positively misleading. It is a privilege of which the French oil crushers and dealers have not been unmindful and which has been conducive to not a little confusion. As a result, it would be useless to attempt an estimate of the aggregate values and quantities of the different kinds of oil consumed in any given district.

ANIMAL FATS.

As for soap oils, cotton-seed oil can not be said to have as yet seriously entered this market. When it does it will have to compete chiefly with linseed oil and with arachide oil made out of decorticated nuts imported from India. Among the animal fats with which cotton-seed oil enters into competition, butter plays the most important part, Normandy being the chief center of the French butter industry. This district produces yearly about 40,000 metric tons of butter, valued, in round figures, at \$25,000,000. A large share is used for local consumption, but no accurate figures are obtainable. Butter is used in the French cooking to an extent which, in the eyes of the American cook, would appear extravagant. It is a case where the proverbial French thrift does not exist, at least in Normandy. The prevailing prices of this commodity, however, do not allow the poorer classes to use it as generally as they would desire, and they have to resort to vegetable oils and greases.

Margarine (or butterine) finds a larger market among the bakers and with the hotels and restaurants than among the people at large. Copra butter is only beginning to be sold in this district, but a vigorous campaign is being waged in its behalf, and it would not be surprising if a demand were created for it before long.

French lard is ordinarily sold in large quantities, but owing to the excessive dryness of last season it is scarcer and dearer than for many years past, and this has resulted in bringing about a renewal of the imports of American lard and especially in greatly increasing the sales of compound lard. Edible tallow should also in a measure be taken into account, but it is impossible to ascertain the quantity consumed.

The following were the average ruling prices in the Havre market during the month of March, 1907, for edible oils (other than cotton-seed oil) and greases per 100 kilograms (220.46 pounds):

PRICES OF EDIBLE OILS AND FATS AT HAVRE, MARCH, 1907.

Oils or fats.	Price per 100 kilos.	Oils or fats.	Price per 100 kilos.
	Dollars.		Dollars.
Olive.....	23.16 to 25.67	Butter.....	\$4.74 to 48.00
Peanut.....	14.40 to 18.70	Lard, French.....	27.50 to 31.20
Sesame.....	16.25 to 18.10	Lard, American.....	28.95 to 30.85
"Oeillette".....	20.80 to 27.02	Margarine.....	17.37 to 24.71
Various edible (mixed) oils.....	13.50 to 17.50	Edible tallow.....	17.00 to 17.27

FEED FOR ANIMALS.

As an article of food for animals cotton-seed oil cake and meal come into competition with the cereals and forage plants produced and imported into the district, and also with various kinds of domestic and foreign oil cakes. The annual yield of oats in this district varies between 25,000,000 and 27,000,000 bushels, about one-tenth of the total crop of the country. Imports from the other departments and from Algeria, Russia, Norway, and Sweden make up whatever deficiency may exist. Barley is also used extensively as stock feed. It is a local product which yields from 8,500,000 to 10,000,000 bushels yearly. Buckwheat is another local product used as food for cattle, especially in Brittany. Its yield is practically equal to that of barley.

To the foregoing should be added from 35,000 to 40,000 tons of corn imported every year from Argentina and the United States, over 40,000,000 bushels of beet roots, and from 8,000,000 to 10,000,000 bushels of other forage plants grown in this district, and considerable quantities of hay, bran, and straw. Moreover, the fact that the district contains 1,042,342 acres of pasture and meadow lands should not be overlooked. And yet there has been for years a very active trade in oil cakes. Mr. Schribaux, the eminent professor, of the Institut Agronomique of Paris, has estimated the total oil-cake trade of France at an average of \$15,000,000 a year. This section probably contributes one-tenth of this amount.

The kinds of oil cake for which there is the greatest demand are, in the first place, the colza cake, a product of the rape seed grown in the district; then linseed-oil cake, both domestic and foreign, the latter being chiefly Russian and American cake. Corn cake and meal also make a good showing, together with arachide, sesame, and copra cakes. The imports of all kinds of oil cake into Havre were 20,733 metric tons in 1906, 26,610 tons in 1905, 15,149 tons in 1904, all from

the United States with the exception of a few hundred tons. Linseed and corn cake and meal constituted the bulk of the imports, cotton-seed cake being a poor third.

The fertilizers chiefly used in this district are nitrate of soda and the various kinds of phosphates and potash salts. The oil cakes used as fertilizers are the colza, linseed, and sulphurized castor-oil cakes. The other oil cakes have a very limited market. Cotton-seed cake not being used at all for fertilizing purposes, can not be considered as a competing product.

There has been of late years a constant decline in the imports of cotton-seed-oil cake and meal, which at one time had a decided preponderance over similar articles sold in this district. A succession of poor shipments have brought about the change. The imports of cotton-seed oil have remained practically stationary during the last five years, but they do not compare favorably with the imports made during the period of 1897-1901. In fact, they have reverted to the level of 1896.

A study of the customs statistics will show that the importation of cotton-seed oil beyond a certain point depends chiefly upon the available quantities of arachide and sesame oils in the French market. These oils are held to be superior to the cotton-seed products. Unless cotton-seed oil can be sold a great deal cheaper than arachide and sesame oils it will not, under present conditions, supplant the latter and therefore materially increase its own sales.

DECREASE IN OLIVE OIL.

The trade in olive oil has constantly increased during the last four decades, but its relative importance has also gradually decreased. The use of vegetable oils becoming more and more general, other oils have come in the market and made far greater progress than olive oil. It is generally believed in the United States that olive oil is used by the French people to the exclusion of all other oils. This is a most erroneous impression. There is no "national oil" there being no "national taste." There are, however, "local tastes," which are the result of local traditions and local prejudices, which have not unfrequently been influenced by local products. It may truly be said that in France every kind of oil has its partisans, and that each one holds almost undisputed sway over well-defined regions. While the better grade of olive oil is sold in nearly every department, its price is prohibitive except for a very limited number. The lower grades are merged with other oils or sold only in the south of France. In the north "oilette" and arachide oils are preferred by most people, who find that the virgin olive oil, so called, is too fruity. In the nut-growing districts, such as the departments comprised within the boundaries of the former provinces of Touraine and Poitou, nut oil is the favorite edible oil. In the vicinity of Mans and in the department of Ile-et-Vilaine there is a grade of linseed oil which enjoys the greatest popular favor. A review of the different departments would probably reveal similar conditions existing in many places.

To sum up, a substantial reduction in the price of cotton-seed oil appears to be essential to a considerable extension of the trade in

northwestern France. This applies equally to the edible and soap grades. In the case of cotton-seed oil cake the lost ground could probably be retrieved if none but cake of good quality were shipped. The trade could also be promoted through the agency of the agricultural syndicates, of which there are nearly two hundred in the country. Free distribution of cakes to the farmers through those syndicates might prove to be the most fruitful kind of advertising. The manufacturers of copra cakes have adopted this method and they have achieved splendid results.

MARSEILLE.

INCREASED DEMAND FOR OILS.

Consul-General Skinner, writing from Marseille, February 23, furnishes a comprehensive report on the importation of cotton-seed products into that port, and supplies figures taken from French returns showing quantities and values of cotton-seed products imported through the port of Marseille, and prices for which they are sold. The consul-general writes:

While the demand for cotton-seed oil will be affected from time to time by threatened or enacted fiscal legislation in Europe, it seems to me that such setbacks are bound to be temporary and local, for the reason that when all is said and done the world-wide need of oils and greases goes on increasing, while the raw-material areas are known, limited, and subject to no systematic effort toward enlargement. Upon this and similar points I refer to a report from this consulate, made in December, 1906, and published in Daily Consular and Trade Reports, January 18, 1907.*

The present general demand for edible vegetable oils is no longer limited to the southern parts of Europe and other Latin populations, but has spread, notably in the United States, thus withdrawing from the market considerable quantities of what were formerly industrial oils, and to that extent embarrassing the soap trade, which itself tends to increase throughout the world. Civilization and cleanliness go hand in hand, and the demand for soap, which amounts to from 12 to 15 pounds per capita per annum in the United States and England, is increasing throughout the world, according as other nations become prosperous and ambitious.

A certain American copra oil concern in the Philippines, organized a very short time ago for the definite purpose of exporting its product to the United States, found upon the completion of its works an immediate demand for the entire output from the native population. Germany and France are increasing their soap production and are taking up more and more of it in their domestic markets. Russia is now importing tallow copra and palm oil, and other nonmanufacturing countries are importing soap heavily. The United Kingdom exported 46,635 tons of soap in 1899 and 58,883 tons in 1906. The United States exported soap to the value of \$1,136,880 in 1897 and

* A portion of this report will be found on page 48.

\$2,670,231 in 1905. The exports of France are practically stationary at about 33,000 tons per annum, but the domestic consumption increases. Thus all the influences tend to mark up prices, if not always profits, so that apparently, as regards oils and greases, we must now pass through a considerable period before the possibility of supply adjusts itself to the demand.

EXTENT OF IMPORTATIONS.

Cotton-seed oil, cake, and meal are used extensively in France, the oil being required chiefly at Marseille, while the cake and meal find a market only in the north. Of the total cotton-oil importation into France, of 36,835 tons in 1906, 22,836 tons were received at Marseille, which is and doubtless will remain the most important foreign market to which American refiners turn their attention. The great soap and edible oil trade offers a buying market of vast assimilative proportions, and the immense oil-crushing industry offers at the same time to the American cotton-oil manufacturers their liveliest competition. The following quantities (net weights) of cotton-seed oil were imported into Marseille during the last ten years:

IMPORTS OF COTTON-SEED OIL INTO MARSEILLE, 1897-1906.

Year.	United States.	England.	Other.	Total.
	Tons.	£.	Tons.	Tons.
1897.....	42,003	6,805	192	49,000
1898.....	51,003	1,792	187	52,982
1899.....	47,546	1,653	229	49,428
1900.....	32,783	1,672	126	34,581
1901.....	33,604	694	114	34,412
1902.....	13,712	1,030	51	14,793
1903.....	13,473	1,374	456	15,303
1904.....	13,284	1,323	295	15,002
1905.....	32,283	80	85	32,448
1906.....	17,325	5,074	436	22,835

IMPORTS OF COTTON-SEED OIL INTO FRANCE, 1903-1906.

Year.	United States.	Other countries.	Total.
	Tons.	Tons.	Tons.
1903.....	20,798	2,600	23,398
1904.....	23,798	2,211	26,009
1905.....	46,641	1,305	48,046
1906.....	28,639	8,205	36,844

PRICES OF AMERICAN AND BRITISH OILS.

The imports of American cotton oils at Marseille during 1906 consisted of 90,021 barrels of comestible oils, against 6,550 barrels of industrial oils. The prices at which American and British oils have been sold in this market during the last ten years, in bond and package included, are shown in the subjoined table. The prices are per 100 kilos, equal to 220 pounds.

PRICES OF AMERICAN AND BRITISH OILS, 1897-1906.

Year.	American.	British.	Year.	American.	British.
	Dollars.	Dollars.		Dollars.	Dollars.
1897.....	8.03	7.78	1902.....	12.81	12.40
1898.....	7.53	7.77	1903.....	12.54	11.73
1899.....	8.51	8.30	1904.....	9.96	9.48
1900.....	11.30	11.06	1905.....	8.84	8.23
1901.....	11.17	10.56	1906.....	12.33	11.80

SLIGHT DEMAND FOR CAKE.

Owing to the vast quantity of oil cake produced in the Marseille mills, there is no demand at this port for American cotton-oil cake or meal, and I am unable at present to supply statistics for France in regard to the total importations of such products from the United States. The total importations of oil cakes into France during four years have been: 1903, 128,180 tons; 1904, 133,811 tons; 1905, 147,465 tons; 1906, 109,953 tons.

IMPORTATION OF LINTERS.

Cotton-seed linters are imported at Marseille to the extent of perhaps a thousand bales per annum, and are reforwarded to manufacturers in the interior. They are used for the manufacture of cheap goods, and could be used in much greater quantities if the American shippers exercised greater care in sorting and packing. Complaint reaches me that no attempt whatever is made by the oil manufacturers to grade this material, and it has been stated to the importers that for some reason not clearly understood it would be difficult to forward linters in better condition. The German market for this merchandise is very much more important than that of France.

COMPETITION WITH OTHER OILS.

Cotton oil enters into competition at Marseille with olive, sesame, peanut, and copra oil for edible purposes, and with every form of industrial grease for other purposes. It is a curious fact that while American oils are entering Marseille in large quantities, Marseille manufacturers are at the same time exporting various classes of their oils to the United States. During 1906, for example, when 17,325 tons of American oil alone came into Marseille, the declared value of Marseille oils exported to the United States was as follows:

OIL EXPORTED FROM MARSEILLE TO THE UNITED STATES, 1906.

Oil.	Value of export.	Oil.	Value of export.
	Dollars.		Dollars.
Almond.....	215	Peanut.....	14,526
Custard.....	9,247	Palm.....	303
Copra.....	141,368	Pennyroyal.....	1,004
Cade.....	614	Savin.....	1,104
Essential.....	1,009	Sesame.....	83,461
Geranium.....	4,390	Thyme.....	272
Edible olive.....	471,464		
Industrial olive.....	151,616	Total.....	912,833

The following prices per 100 kilos prevailed on the oils commonly sold in this market in 1906 and 1907:

PRICE PER 100 KILOS OF OILS ON MARSEILLE MARKET, 1906-7.

Oil or fat.	1906.	1907.
Cotton seed:		
American prime summer yellow	Dollars. 9.84	Dollars. 13.51
American of grade	8.87	12.35
American winter edible	10.31	15.44
American choice white edible	10.81	15.44
English sweet edible	9.63	12.74
English ordinary refined	8.63	11.58
Peanut (Marseille make):		
Ordinary soap oil	9.45	11.98
Ordinary soap oil for March to December, 1907	9.55	11.98
Edible	14.47	15.44
Copra (Marseille make):	to 17.37	to 18.38
Cochin	13.31	19.30
Ceylon	13.12	18.91
Ordinary soap oil	11.58	17.95
Sesame	13.99	16.40
Palm:	11.48	14.67
Tallow:		
Australian	12.93	17.17
River Plata beef	13.51	17.66
River Plata mutton	13.51	17.75
American No. 1	12.64	16.60
Yellow grease stearyl	11.57	16.21

It is difficult to ascertain just how much olive oil finds a market in Marseille. The imports were, in 1904, 29,855 tons; in 1905, 18,666 tons, and in 1906, 23,152 tons. The export of olive oil from this port amounted to 12,448 tons in 1904 and 14,558 tons in 1905.

IMPORTS OF VEGETABLE SEEDS.

The local manufacture of vegetable oils increases or diminishes according as the crops are good or bad in the seed-growing countries of the world. Importations of seeds at this port have been as follows in recent years:

IMPORTS OF VEGETABLE SEEDS INTO MARSEILLE, 1898-1906.

Year.	Quantity.	Year.	Quantity.
	Tons.		Tons.
1898	303,350	1903	494,440
1899	328,642	1904	455,253
1900	336,457	1905	359,966
1901	384,479	1906	430,461
1902	415,722		

Every pound of the foregoing material is treated for oil which competes more or less directly with the American product.

The following table shows the export of oils from France during the years 1905 and 1906:

EXPORTS OF OILS FROM FRANCE, 1905 AND 1906.

Oils.	1905.	1906.	Oils.	1905.	1906.
	Tons.	Tons.		Tons.	Tons.
Olive	21,974	22,819	Sesame	11,507	9,477
Palm	766	446	Peanut	5,557	4,813
Illipi, etc.	12,718	15,131	Cola	2,476	2,227
Caster	4,204	3,812	Poppy (oillette)	1,314	1,208
Linseed	3,773	4,176	Poppy (pavot)	340	333
Rape	76		Others	1,873	2,003
Cotton	5,279	6,630			

PRICES FOR CAKE.

As previously stated, cotton-seed cake and meal find no outlet in this city or region, where they would have to compete with other oil cakes, which at this date (February 23) are selling in the Marseille market at the following prices per 100 kilos (220 pounds):

PRICES OF SEED CAKE OTHER THAN COTTON SEED ON MARSEILLE MARKET, 1906 AND 1907.

Kind of cake.	1906.	1907.	Kind of cake.	1906.	1907.
	Dollars.	Dollars.		Dollars.	Dollars.
Peanut	3.43	3.28	Poppy, white	2.50	2.50
Sesame, white	2.94	2.99	Copra, white	2.94	3.66
Sesame, black	2.70	2.80	Copra, ordinary	2.60	3.58

DECREASE IN PRODUCTION OF OLIVE OIL.

It is of course true that the Latin countries of Europe, which formerly produced sufficient quantities of olive oil for their own uses, are now compelled to make use of cotton or other edible oils, partly because the olive-oil crop of the world tends to decrease in quantity and to deteriorate in quality. While manufacturers of seed oils generally find it possible to produce uniformly satisfactory merchandise, the peasant farmers have given little attention to the care of their olive trees and the oil manufactured in a small way in thousands of mills is produced and handled very much as it always has been. Certain regions, like Aix, in France, and Lucca, in Italy, very famous as centers from which high-grade olive oil is forwarded, have lost their importance as growing centers as to quality, and bottlers of high-priced oils are compelled to scour the whole of southern Europe to pick up here and there first-class substitutes, by which the ancient reputation of Aix and Lucca is maintained.

There is at present a demand for low-grade soap oils at Marseille which American manufacturers should be able to supply to some extent. Why they have offered nothing but superior oils is not quite clear, as local importers, to my certain knowledge, are actively looking for soap oils at this time. Claims made by local importers, based upon unsatisfactory deliveries of prime summer yellow contract merchandise, have perhaps given rise to the impression that Marseille is interested only in edible stock. This, however, is not the case.

ADVICE TO AMERICAN PRODUCERS.

The following paragraphs are taken from the report to which Consul-General Skinner refers and which was published in Daily Consular and Trade Reports for January 18, 1907:

In view of the world-wide demand for vegetable greases and the apparent limitation of the world's stocks of raw material, it will be useful for the American cotton-oil manufacturers to inquire of themselves whether they are not in greater need of knowledge regarding manufacturing methods for their own use than of foreign markets for a product which is already marketable at high and generally increasing prices. I am told, with how much accuracy I can not say, that comparatively little of the cotton-oil cake or other cakes produced in the United States are subsequently treated by chemical process for the purpose of extracting therefrom every vestige of oil remaining. It is intimated to me that by applying Marseille processes in the southern United States the yield of low-grade oils could be increased by as much as 15 per cent, an enormous figure when the total amount of the cotton-oil production is considered. Several large establishments in this city take up the residue of olive-oil mills and of vegetable-oil mills and, using either sulphuret of carbon or tetrachloride of carbon as solvents, withdraw from the meal or the cake every remaining vestige of oil with entire commercial success.

SAPONIFICATION OF CRUDE PETROLEUM.

For a number of years inventors have been looking for a process which would permit the saponification of crude petroleum, but thus far without any real progress. For a year or two a mineral grease of rather mysterious origin was offered to soap makers in this market, which a few of the more venturesome purchased in trial quantities and used in low-grade soaps to the extent of 5 per cent. It was found that the resulting soap acquired a disagreeable color with age, and the theoretic economy realized by the use of only 5 per cent of this mineral grease was too trifling to offer much practical encouragement to the scheme, and in the present state of the soap-making industry a first-class product continues to be obtainable only by a skillful combination of copra oil and a neutral oil, such as that of peanut, cotton, or gingelly seed.

NANTES.

OIL FROM EGYPTIAN SEED.

Consul Louis G. Goldschmidt, of Nantes, reports, under date of March 23, that a considerable quantity of cotton-seed oil is used at Nantes, which is pressed by local mills from Egyptian seed. He continues:

About 2,000 tons of cotton-seed oil is used in this consular district each year. It is manufactured here from cotton seed imported from Egypt and is used exclusively in the manufacture of soap by the local soap factories. Oil is worth from \$13.50 to \$13.85 per 100 kilos, making the ton of 1,000 kilos \$135 to \$138.80. The value of the oil used annually is about \$275,000. Linters are not used here.

Cotton-seed oil comes in competition with peanut oil, coconut oil, and palm oil. If cotton-seed oil is used as a food, that fact is not known. It probably enters to a great extent into the manufacture of edible oils. It is very hard, if not impossible, to obtain the quantities and values of the competing oils here. Most of them are not manufactured in this district, some being imported, but not appreciably through this port.

Cotton-seed cakes and meal come in competition with peanut cakes, copra cakes, and rape-seed cakes. Very little cotton-seed cake is used here for feedstuff and none is employed for fertilizers. The quantity used is very small, as most of the cakes manufactured by the local factories are exported to England, where cakes from un-decoricated (unshelled) seed sell at about \$23.50 per ton and those from shelled seed at \$36.25 per ton. The meal or cakes used for feed for cattle are those made from shelled seed, and sell at about \$3.60 to \$3.80 per 100 kilos.

In the last two years there has been some increase in the use of cotton seed, and consequently in the same proportion in the cotton-seed oil used here for manufacturing purposes.

EGYPTIAN SEED SAID TO BE SUPERIOR.

The cotton seed used here comes from Egypt. It is claimed to give a slightly larger rendering in oil. The Egyptian seed is said to give about 15 per cent of oil, and seed that is decoricated gives about 32 per cent oil. The American seed gives about 2 per cent less. The seeds are also cleaner, containing much less lint than the American seed, and consequently the cakes can be more easily used as feed for cattle. If the seeds can be shipped without the shell, or at least without the large quantity of lint adhering to American seeds, I believe that the sales of the American product can be considerably increased.

STATEMENT FROM A LOCAL FIRM.

In conclusion I shall give the following information obtained by me from the firm of L. Loiret & Ch. Haentjens, brokers, at Nantes, which has made a study of the cotton-seed question:

There are no imports at Nantes of cotton-seed cakes, nor meal, nor cotton-seed oil. Yet the local soap factories, which are quite important, since they produce about 20,000 tons of soap per year, employ cotton-seed oil whenever they

find an advantage in so doing. Generally these oils are purchased from an important oil factory here, which manufactures from Egyptian cotton seeds. But when seeds are high and cotton-seed oil comparatively cheaper our soap makers import some from England. Nantes imported in 1906 1,146 tons of cotton-seed oil from Liverpool and Hull.

Regular steamship service exists between Nantes and English ports, either direct or by transshipment, which makes this business comparatively easy, as the soap makers do not purchase these goods except as needed from time to time. One soap factory alone (the most important one here) grinds cotton seed as well as other kinds of oil-producing materials—peanuts, palm seed, and copra.

Of cotton seed they imported in 1906 10,124 tons and in 1905 10,104 tons. These importations have been about 2,000 tons greater per year than the average of the preceding years, due principally to the high price of peanuts. All the cotton seed imported comes from Egypt. The seeds are not entirely clean of lint and the oil mills have not the necessary machinery for unlinting. The cotton-seed oil produced is used exclusively for soap making. The factories are enabled to extract the glycerin, which is sold to the United States through English houses.

The Egyptian cotton seed renders about 17 per cent of oil, more or less, according to certain years and conditions of shipment. Ten thousand tons of seed should give about 1,700 tons of oil, 100 tons of "mucilage," 3 tons of deflections, and 8,200 tons of cotton-oil cakes or meal. These cotton cakes are sold, without being reduced to meal, for feedstuff. During a number of years it has been very hard to introduce these oil cakes for feedstuff, and they have been shipped to England and Denmark for consumption in those countries. But now, and particularly owing to the extremely dry weather last year and the consequent scarcity and high prices of fodder, about three-fourths of the cotton cakes made here are used in this region.

The soap makers mentioned would like nothing better than to try American cotton seed if quality and price permitted it. Some years ago sea-island cotton seed was received here which was of beautiful quality.

There also seems to be a fear that the American cotton seed, owing to a long voyage, might not reach here in good condition and might become heated. However, we believe this fear unfounded, as it takes the cargoes from Alexandria about two weeks to get here, while cargoes of phosphates from the United States reach here in about twenty days, coming from Tampa.

In connection with this it would be possible to us to ship partial cargoes of phosphates and part cotton seed, if such could be obtained in the same region—one hold of phosphates and one hold of cotton seed. In this way freight rates might be considerably reduced. It is supposed that both these products come from the Southern States. We have several times received part cargoes of phosphates which had left the rest of the cargo, consisting of cotton bales, at Havre before coming to Nantes.

RHEIMS.

MEAL CAKE LARGELY USED.

Consul J. Martin Miller, of Rheims, reports that as the cities of his district are inland ports, each deriving its imports from various ports in other consular districts, he can not give figures representing the amount of cotton-seed products used. He writes under date of February 26:

While this is one of the greatest agricultural sections of France and great quantities of grain and plants are produced for the manufacture of edible oils, as well as large crops of beets and other products for animal foods, cotton-seed meal cake is used here extensively. In Rheims and some of the other cities there are some large feed stores that seem to make a specialty of handling cotton-seed cake

particularly for dairy cows. The cakes here average about 6 inches in width, 15 inches in length, and 1½ inches in thickness. They are soaked in a pail of water sometimes, but generally are crushed into small pieces the size of a walnut and smaller by a hand machine and then put into water and converted into a mush. This is the popular method of preparing the cake for cows. It is also fed to horses.

The ground cake (cotton-seed meal) is used in France to some extent as a substitute for cotton waste for packing the axle boxes of railway cars, etc. It is claimed by the best dairies and stock growers here that cows fed with the meal show an improvement in the quantity and quality of their milk, while the beef from cattle fattened principally on the meal is of excellent quality.

With regard to the other by-products of the cotton-seed industry, the lint in France is used in the manufacture of paper of excellent quality. The hulls are ground with the meal for fodder, and the residues from the clarifying of the oil (cotton-oil soap stock), palmitin, etc., are used in the manufacture of soap. This district seems to be supplied with cotton-seed meal cake, etc., from Dunkirk and other seaport places, at which points, it is said, there are several factories. None, so far as I am aware, is manufactured in this district. The price of cotton-seed meal cake in Rheims at retail is 17.50 francs, or \$3.38 per 100 kilos (220 pounds), but when flax-seed meal is mixed with it the price is \$4.15 per hundred kilos.

USE AND MANUFACTURE OF OILS.

It is claimed that cotton-seed oil is used as an adulterant, or as substitutes for olive and almond oil and lard in France. It is said also that it finds application here in the treatment of leather, in dressing wool, and as a lubricator and an illuminant. There is no country probably where "salad oil" is used so extensively as in France. The peasants, however, are noted for being able to produce and manufacture their own oil for table use out of several articles they grow themselves. Colza is an oil-producing grain that flourishes throughout France. Navette and oeillette, and the pavot (poppy), the two former being two different varieties of the pink, are used in the manufacture of edible oil, as well as such products as peanut root, flaxseed, rape seed, etc. The value of the olives produced in France in 1904 (the latest report issued), according to the report of the French minister of agriculture, was 23,782,939 francs, or \$4,580,457. Oil, nearly all of which is under the head of olive oil, to the value of \$4,797,760 was imported into France from other countries, \$2,834,875 of which came from Tunis and nearly \$900,000 worth from Algeria.

OIL ADULTERATION AND PRICES.

This consular district produces no olives, but much oil is made here by individuals that passes for olive oil in the local trade. Colza, navette, and oeillette are produced here as well as in other parts of France. In 1904 the crop value of the three articles named, from all of which oil is made, was colza (a kind of grain), \$2,497,739; oeillette (pinks), \$400,431; navette (a plant like pink), \$291,548.

When the above is manufactured into oil its value, of course, is increased. It is not likely that the individuals who make oil for their

own use and the small neighborhood manufacturers blend these products with foreign substances, but it is altogether likely that the speculators and dealers who buy from every direction do mix in every way possible to disguise. It is easier, however, for firms so disposed to produce imitations of olive oil and market it as the genuine article when located in the south of France in or near the olive belt. It is the custom of scores of these firms to send circulars to families in other parts of France praising their own production as the dependable article and offering to sell direct to consumers.

Oil in the retail shops here is usually kept in barrels and sold in bulk to the families who bring their own vessels. It sells as low as 5 cents a quart, and the family too poor to afford meat will have the inevitable "salad oil" and cheap wine at each meal except breakfast. The high-class stores guarantee their olive oil, which is in pint and half-pint bottles and quite expensive, the price varying according to the brand.

It is safe to say that cotton-seed oil comes into competition with all the different oils named above, more or less. That it is used quite extensively as a substitute for olive oil in France is generally conceded.

LYON.

OIL AND SEED CAKE MARKET.

Consul John C. Covert, of Lyon, reporting under date of March 13, says that there is not one cotton-seed oil factory in Lyon or a wholesale establishment where details can be obtained. He continues:

A number of small feed stores sell cotton-seed oil cakes, which they receive principally from Marseille and Havre, the two great ports of entry of France. Most of it comes from Marseille. At the oil exchange in this city I was informed that 176,368 pounds of cotton-seed oil is consumed in Lyon and the surrounding country annually. Another authority estimates it at 220,000 pounds. It is used in the place of olive and colza oil in cooking and in salads. It is generally sold as pure olive oil, but I am informed on good authority that where olive oil is called for and a fair price is paid the pure article can always be had.

At the general office of the agricultural societies of southeastern France, in this city, I was told that the annual consumption of cotton-seed cakes in this part of France aggregates 44,092 pounds. The annual consumption of copra cakes is much larger, having aggregated last year 440,920 pounds.

There is a slight consumption of corn cake, called gluten de maizé, but the quantity is unknown.

LA ROCHELLE.

WOULD SELL IF PROPERLY REPRESENTED.

Consul George H. Jackson, of La Rochelle, is unable to obtain figures. His report, dated February 22, is as follows:

All the cotton-seed products which reach this district come from Havre, Marseille, or from German or Belgian ports. This district does not manufacture any oils for human consumption.

The fertilizers used here are manufactured exclusively from Florida phosphates and Chilean nitrate. It should be noted that there are certain summer seasons when we have so little water in this region that pasturage is completely destroyed and the crops of hay and other vegetables are very sensibly diminished. Under these conditions the use of cotton-seed products would easily come into vogue should the goods be properly presented.

GERMANY.

PLAUEN.

MARKET CONDITIONS IN SOUTHWESTERN SAXONY.

Consul Carl Bailey Hurst submits the following report, dated March 4, on the use of cotton-seed products in Saxony, with special reference to the Plauen consular district:

For some years cotton-seed oil has been used in this section of southwestern Saxony, comprising the consular district of Plauen. The qualities of the oil are fully recognized by the trade, and its limited consumption here is a temporary condition accounted for by the lower price of certain competing oils of domestic manufacture. Cotton-seed cake, as such, is not found as yet on the local market. On the other hand, cotton-seed meal is being steadily taken up, and a fine future seems to await its wider adoption in this region. Although textile manufactures are the engrossing industry of the inhabitants, and agriculture, by reason of the rocky conformation of the country, is not so flourishing as elsewhere, there are many important farms in the neighborhood, as well as small strips of ground from which thousands of peasants derive their sustenance.

Some time ago a produce dealer in Plauen began to import cotton-seed meal and was able to dispose of a carload about every quarter. The peculiar advantages of the meal were soon demonstrated to those using it for fattening stock and increasing the output of the dairies. The small farmers are conservative, however, and it is only by personal argument, especially in pointing to the practice of others in the immediate vicinity, that sales are gradually enlarging. So true is this that there are no isolated spots in this district where cotton-seed meal is used, but, having started on an estate near Plauen, the field has almost literally extended foot by foot in all directions. Owing to the danger of feeding cotton-seed meal indiscriminately to stock, particularly hogs, the farmers, in the absence of more light on the subject, have been chary of its use, but when finally convinced of the

wonderful fattening properties of the meal, given in rightly proportioned rations, they will become steady buyers.

As there are no farms of sufficient extent to warrant ordering large consignments of cotton-seed meal for individual use, the proprietors supply their needs from Plauen, and a carload of the meal a month may be taken as a close estimate of the total amount used at the present time in this limited territory.

BREWERY MASH A COMPETITOR.

As a competing article the refuse mash of the numerous breweries is much liked here for feeding stock, and it is preferred to get the feed from the breweries in a wet condition when not too far distant from the farms. Dry mash is also used in this neighborhood. The American is whiter and is preferred to the German product. German dry mash costs about \$1.19 (5 marks) for 110.23 pounds (50 kilos) and the American imported article is some 6 to 12 cents dearer. As it is difficult to gauge the value of the local beer mash, which weighs more or less according to the degree of humidity that it contains, it is sold here on a basis of the original amount of barley used. For instance, the residue of 1,322.76 pounds (600 kilos) of barley, after having been used in brewing, is sold for \$8.57 (36 marks). In consequence of the high prices in the feed market rice feed has been much used lately, although containing only 24 per cent of protein and fatty matter. It is the cheapest of all feeds now offered and is employed to a large extent as a substitute for bran, which has gone up so much as to put it practically out of reach. Patent meat-feed meal is used, and lately fish feed for hogs and chickens has become popular. In consequence of the large demand the cost of this article has also risen.

CURRENT PRICES.

The current local prices for cotton-seed meal and competing feed materials plus cost of freight are as follows per long ton, except as otherwise specified:

PRICES OF VARIOUS KINDS OF FEED ON THE PLAUEM MARKET, 1907.

Kind of feed.	Protein and fatty matter.	
	Per cent.	Dollars.
Cotton-seed meal, Texas, double sieved.....	56 to 60	\$7.15 to \$8.65
Cotton-seed meal, German.....	56 to 60	\$6.53 to \$6.89
Cocoanut cake, Ceylon, light, round.....		\$5.94
Cocoanut cake, prime English.....		\$3.08
Corn-cake meal.....	30.58 to	\$1.65
Linseed cake.....	32.25 to	\$4.27
Linseed meal.....		\$4.89
Mash, heavy, dry.....	26 to 30	\$4.87
Mash, distillery.....		\$1.42 to \$1.90
Meat-fodder meal, Liebig's.....	90	\$2.60
For orders of long ton.....		\$2.57
Palm-seed cake, German.....		\$8.20
Palm-seed meal.....	56 to 60	\$7.84
Peanut cake, A 1, extra quality, German, made of selected ruskque nuts.		\$9.03
Peanut meal, prime white, ground from the foregoing cake.....	56 to 56	\$1.42
Peanut meal, German.....		\$9.99
Poppy cake, light, German.....	20 to 24	\$1.42
Rice-feed meal, German.....	24 to 28	\$2.01
Rice-feed meal, Bangum.....		

a Per ton in sacks of 165.35 pounds each.

b Per 110.23 pounds.

The edible vegetable oils, with which cotton-seed oil chiefly competes, are olive, palm seed, peanut, rape, sesame, poppy, cocoanut, and, in lesser amount, sunflower-seed oil, with the nonedible almond, mustard, linseed, corn, hemp, and palm. The leading greases and waxes on the local market are butter, lard, goose fat, mutton tallow, beef tallow, the vegetable Japanese wax, and the mineral cerezin. The principal brands of artificial butter here are vitello, a Dutch margarine, and palmin, presumably a preparation of which palm-seed oil is the chief ingredient, or which contains in larger proportion the palmitin properties of other fluid or solid vegetable fats. A prepared dripping in general culinary use is composed of equal parts of butter and lard, and is preferably put up by housewives when butter is cheapest. Rape-seed oil is also used in frying, and goose fat is not uncommonly taken for spreading on rye bread.

STRINGENT PURE FOOD LAW.

Formerly cotton-seed oil was used in this neighborhood somewhat for frying, but has since been replaced by other materials. Olive oil is generally bought for the table, fine Provence oil being a favorite, but as it is nearly double the price of refined Texas cotton-seed oil the American product should find a wider market, not only on account of the lower price but also by reason of its good qualities. At a small exhibition held a few years ago in this neighborhood pure cotton-seed oil was shown and was very favorably spoken of for table use. As proper advantage was not taken of this opportunity it is now scarcely to be found on the market. The pure-food laws of this country are very stringent as to adulterations, and it is not permissible to mix an olive oil that is sold as such with another oil. If cotton-seed oil or some other edible oil is sold under some trade name, the kind of oil or the various blended ingredients must be described on the bottle.

SOAP INDUSTRY.

In soap making the sharpest competing article of cotton oil is corn oil, which has rapidly advanced during the last two or three years. There are some small soap factories in this district and more cotton-seed oil would be used if the oil were lower in price. Cotton-seed oil is mixed here with linseed oil, as thus the product freezes less readily. In summer the oil is used in larger proportion in the making of soft soaps, as then no danger of frost exists. A great deal of soap is used in the local textile industries and the cotton-seed oil could be employed to a certain extent in them if carefully combined. When cotton-seed oil is imported into Plauen it is usually denatured, as the duty is some 60 per cent less than for the oil when it is to be used for edible purposes. The white, refined American oil, though dearer, is preferred. In the preparation of the yellower foreign varieties the seeds have not been decorticated, so that hulls and kernels are crushed together.

The soap makers prefer hog fat to vegetable oils for local wants, but do not use it exclusively on account of the high prices. The animal fats under the soap-making processes now employed seem to have a softer effect on the washing of textiles, particularly the white laces and embroideries made in such great quantities in this neighborhood. As glycerin has advanced some \$15 a ton since last

autumn and cotton-seed oil has not advanced in proportion, there seems to be an opportunity for the larger use of the vegetable oil. Sunflower oil has been used considerably in the past in the manufacture of toilet soaps, and is a substitute for palm-seed oil. The sunflower oil has been imported chiefly from Russia, but the trade in that country being at present unsettled there has been very little import in this line recently, needs being covered by other oils, among which cotton-seed oil takes a principal place.

RATES OF DUTY.

There is no German duty whatever on pure olive oil imported in barrels from the countries with which Germany has special tariff treaties. On olive oil coming from other countries a duty of 10 marks (\$2.38) is levied per 100 kilograms (220.46 pounds), or, if denatured, 2 marks (\$0.476) for the same quantity. If imported otherwise than in barrels, the duty on pure olive oil coming from treaty countries is 10 marks per 100 kilograms and from other countries 20 marks. On cotton-seed oil the duty is invariably 12.50 marks (\$2.97) per 100 kilograms, or, if officially denatured, 5 marks (\$1.19) for the same amount when imported in barrels. Other oils imported in barrels pay, per 100 kilograms (220.46 pounds), as follows:

Colza and rape, \$2.86; linseed, \$0.952; beech, peanut, poppy, Brazil, sesame, and sunflower, \$2.38; sesame oil, officially denatured, \$1.19; wood oil, \$0.95; castor oil, \$0.476; other vegetable oils, \$2.14, officially denatured, \$0.95. If imported otherwise than in barrels a duty of \$4.76 per 100 kilograms is payable for all the foregoing oils with the exception of castor oil, which is admitted at the rate of \$0.476 per 100 kilograms, if imported in tin receptacles weighing with the tin at least 15 kilograms.

Vegetable fats pay per 100 kilograms as follows: Cocoa butter and cocoa oil, \$8.33; oil of mace and bayberry oil, when in butter form in barrels \$2.14, and in other receptacles \$4.76; cotton stearin, raw, \$2.97; palm oil, coconut oil, and other vegetable fats not edible, \$0.476; oleic acid, \$0.714. The reason for the discrimination in duty between olive oil and cotton-seed oil to the advantage of olive oil may be found in the reciprocal concessions between Germany and those countries with which Germany has formed tariff treaties.

COTTON-SEED OIL PROCESSING.

Cotton-seed oil is used in some small quantity here by druggists in compounding liniments, although not official in the German pharmacopoeia. It is coming gradually into use in the trades and in the arts, as its qualities are becoming better known. It should be remembered that while many of the competing oils have been in use here for centuries the first experiments with cotton-seed oil in Germany were made only about fifty years ago with Egyptian cotton seed pressed in this country. The oil is making its way surely, but would progress more rapidly if the price could be brought below that of some of the competing oils. For illuminating purposes it has not yet been tried here. Any supply for local use is nearly always drawn from the wholesalers having depots in the free zones at German seaports. As will be noticed, the denatured oil pays considerably less

than the refined oils, but American exporters should not attempt to denature the oil for the German market, because the denaturing is done officially under German supervision before being freed from the bonded warehouses.

IMPORTS AND EXPORTS OF VEGETABLE OILS AND FATS.

The following table shows the state of trade in the leading vegetable oils and fats in Germany during 1906, giving the quantities in long tons, average prices, and chief countries of origin and of destination:

IMPORTS AND EXPORTS OF VEGETABLE OILS AND FATS IN 1906.

IMPORTS.			
Kind.	Quantity.	Average price per long ton.	Chief countries of origin or destination.
Vegetable oils:	<i>Long tons.</i>	<i>Dollars.</i>	
Cotton-seed oil	32,977	75.90	Great Britain, 6,514.6 tons; United States, 25,394.3 tons.
Castor oil	4,138	91.39	Belgium, 1,776 tons; France, 457.3 tons; Great Britain, 1,781 tons.
Colza and rape seed oils.	124	66.64	France, 14.7 tons; Great Britain, 75.5 tons.
Corn oil (including hood and bone oils).	2,577	102.82	Belgium, 110 tons; United States, 2,120.9 tons.
Linseed oil	2,021	76.16	Great Britain, 166.2 tons; Holland, 1,665.4 tons.
Olive oil, pure	8,871	178.50	France, 1,628.9 tons; Greece, 1,155.8 tons; Italy, 2,902.5 tons; Turkey, 390.1 tons.
Olive oil, residuary	4,712	85.68	France, 98.7 tons; Greece, 204.3 tons; Italy, 4,320.5 tons.
Peanut oil	986	116.14	Belgium, 277.8 tons; Holland, 677.4 tons.
Poppy, beech, niger, and sunflower oils.	78.5	171.35	Belgium, 50 tons; France, 31.1 tons.
Sesame oil	1,263	81.87	Belgium, 364.9 tons; France, 623.6 tons; Holland, 236.4.
Wood oil	1,854	105.67	China, 1,788.7 tons.
Vegetable fats:			
Cocoa butter	10.4	542.64	Holland, 10.3 tons.
Coconut oil and by-products	2,434	104.72	Belgium, 833 tons; British India, 211.3 tons; Ceylon, 1,268.1 tons.
Cotton stearin	739	95.20	United States, 737.3 tons.
Oil of mace	17.3	474.03	Italy, 5.8 tons; Turkey, 8.5 tons.
Oleic acid	14,015	70.45	Belgium, 6,824.6 tons; France, 1,731.9 tons; Holland, 1,475.6 tons; United States, 2,567.1 tons.
Palm oil, palm butter, and palm fat	8,469	91.39	British West Africa, 7,273.7 tons; Great Britain, 692.3 tons.
Palm-seed oil and palm-seed fat	222	96.06	British West Africa, 158.8 tons; Great Britain, 45.9 tons.
Shea butter and other vegetable tallow	538	128.02	Belgium, 58 tons; British West Africa, 82.6 tons; China, 187.5 tons.
EXPORTS.			
Vegetable oils and fats:			
Cocoa butter	2,118	628.95	Great Britain, 141.8 tons; Holland, 454.2 tons; Switzerland, 532.5 tons; United States, 462.1 tons.
Coconut oil and by-products, shea butter.	4,037	148.75	Austria-Hungary, 1,455.9 tons; Great Britain, 709.4 tons; Holland, 302.7 tons; Switzerland, 567.5 tons.
Colza and rape seed oil	5,638	105.21	Great Britain, 4,410.8 tons.
Linseed oil	119	102.34	Brazil, 16 tons; Chile, 9.1 tons; Switzerland, 23.9 tons.
Oleic acid, olein	198	101.83	Austria-Hungary, 65.6 tons; Belgium, 35.7 tons.
Palm oil, palm butter, and palm fat	45.5	119.90	Switzerland, 23.6 tons.
Palm-seed oil and palm-seed fat	15,143	122.57	Austria-Hungary, 3,982.3 tons; Great Britain, 7,886.8 tons; Switzerland, 1,624.4 tons; United States, 2,701.6 tons.
Sesame, peanut, and beech oils	983	154.70	Denmark, 536.2 tons; Holland, 142.7 tons; Switzerland, 133 tons.

The chief artificial fertilizer used in this district is the Thomas phosphate, a pulverized Thomas slag. It seems to meet the conditions of the soil in this neighborhood, although there is no reason why cotton-seed cake should not be used alone where the nature of the ground permits, particularly for rye and barley crops, as well as in combination with other ingredients. A fact not fully appreciated by the farmer here is that farmyard manure resulting from feeding cattle cotton-seed meal possesses the richest possible fertilizing qualities. Even where the meal is made from undecorticated seed it is not inferior to the manure of cattle fed with rape seed, linseed cake, and malt dust. If the cotton-seed meal or cake is made of decorticated seed, the manure is at least 50 per cent more valuable than from any other of the feeds mentioned. For the reason that rape and flax are largely grown in the country and are substitutes for cotton seed, they become formidable rivals to the imported seed cake. The cotton-seed cake, well powdered, is recognized by advanced agriculturists as a superior fertilizing agent, but its price bars at present its general adoption, although there is no German duty on its importation. Kainit, produced in Germany, is employed for root crops, with other fertilizing materials. When the deficiencies of the soil demand, sulphate of ammonia is used here as a powerful and readily soluble fertilizer, but of concentrated manures the Thomas phosphate is most used. Indian bone dust is employed, and lately a fish guano has been introduced and is taken in increasing quantities.

IMPORTATION OF OIL SEEDS.

The mills in this country that express oils use foreign seeds and kernels very largely. It has been stated that in 1906 Germany imported \$10,460,000 worth of oil-yielding seeds. The home oil-crushing industry is growing rapidly, and dutiable material used in manufacture can be imported directly to the mills duty free and utilized under official supervision until the oil is either exported or sold to the domestic trade. There are special provisions for the operation of these mills and the mill owners endeavor to make as much oil as possible to cover the needs of the country, and thus be independent of foreign markets. The German colonies are expected to supply increasing quantities of palm seed, copra, and peanuts.

The amounts, in long tons, of the principal oil-yielding seeds, nuts, and other oleaginous vegetable material imported into Germany during 1906 for use in the domestic oil mills may be summarized as follows:

IMPORTS OF OIL-YIELDING SEEDS IN 1906.

Article.	Quantity.	Average price per ton.	Chief countries of origin.
	<i>Long tons.</i>	<i>Dollars.</i>	
Cotton seed	15,282	30.94	British India, 1,021 tons; Egypt, 9,817 tons; United States, 3,317 tons.
Castor beans.....	3,584	47.60	British India, 3,002 tons; Dutch India, 220 tons.
Coza and rape seed.....	64,315	54.74	British India, 46,157 tons; European Russia, 5,182 tons; Roumania, 7,319 tons.
Copra.....	39,127	76.16	British India, 5,683 tons; Ceylon, 4,872 tons; Dutch India, 21,368 tons.
Cyperus root, beech-nuts, and bayberry.....	228.3	59.50	Belgium, 97.4 tons; France, 20.8 tons.
Flaxseed	324,190	52.36	Argentina, 168,667 tons; British India, 40,350 tons; Russia, 41,017 tons; United States, 67,811 tons.
Hemp seed	6,681	45.22	European Russia (duty free), 6,286 tons.
Madia, bombax, and niger seed.....	147.5	35.70	European Russia, 105.6 tons; Great Britain, 29.8 tons.
Mustard seed.....	4,183	64.26	British India, 364 tons; European Russia, 2,142 tons; Holland, 72.8 tons.
Palm seed	116.495	64.26	British West Indies, 109.137 tons.
Peanuts	15,248	47.84	British India, 2,977 tons; French West Africa, 8,873 tons.
Poppy and sunflower seed	24,028	56.52	British India, 18,435 tons.
Sesame seed	49,355	61.88	British India, 25,484 tons; China, 18,419 tons.
Sesame (German), radish, and cross seed.....	2,339	42.84	European Russia, 2,236 tons.

IMPORTS AND EXPORTS OF OIL CAKE.

The imports and exports during 1906 of oil cake of all kinds, which are not separately specified in the latest available statistics, were 461,480 long tons, at an average value of \$3.09 (13 marks) per 220.46 pounds (100 kilograms), as shown in the following table:

IMPORTS AND EXPORTS OF OIL CAKE OF ALL KINDS IN 1906.

Imported from—	Quantity.	Exported to—	Quantity.
	<i>Tons.</i>		<i>Tons.</i>
United States.....	158,886	Denmark.....	36,022
Russia in Europe.....	152,537	Great Britain.....	31,279
France.....	39,646	Netherlands.....	30,810
British India.....	24,367	Sweden.....	22,037
Austria-Hungary.....	22,295		
All other countries.....	65,838	Total exports.....	120,148
Total imports.....	461,480		

PRICE AND USE OF LINTERS.

Linters are not at present employed in the industries of this particular district. Not far from here, however, vicuna cloth is manufactured in which linters are used when the price does not render them inapplicable for the grade of cloth to be made. Linters are generally taken for vicuna fabrics as a substitute for shoddy. For the reason that the supply of shoddy is limited, linters, even at a higher price, come into necessary consideration. During 1906, 20,871 long tons of linters, at an average price of \$16.66 (70 marks) for

220.46 pounds (100 kilograms), were imported into Germany, of which 9,917 tons came from the United States, 3,941 tons chiefly from British India, 2,756 from Great Britain, and 740 tons from France. The current saying here that price is the sole criterion as to the merits of linters, irrespective of the country of origin, can be at least challenged, pending a fuller investigation of this question, on the basis that the greatest percentage of the total amount of linters imported during the year just closed came from America.

AIX LA CHAPELLE.

DISTRICT OF COTTON-SEED PRODUCTS.

Consul Pendleton King, writing March 12 from Aix la Chapelle, says:

Cotton-seed oil is not at present sold in this consular district as an article of food, but American cotton-seed oil is extensively used in the manufacture of silver soap of a butter-like consistency. The present price is 62 cents a gallon for pure American oil and 60 cents for good Indian cotton-seed oil, barrel and duty of 10 cents a gallon included.

Customs officers estimate the amount of American cotton-seed oil used in this district at 150,000 gallons a year, most of which comes through Antwerp and Hamburg. The Indian oil comes from Hull, England. A small quantity of the best American oil is used for the manufacture of margarine butter—perhaps 15,000 gallons a year.

Cotton-seed meal and cakes (mostly meal) as food for dairy cows are sold here at \$37.50 per 1,000 kilograms. The amount consumed is estimated at 250 carloads of 10,000 kilograms each, nearly 2,500 tons; but much of this meal has been mixed with meal from India before arrival. It is not possible to say how much of it comes from the United States, probably not more than one-half. It comes via Antwerp, Rotterdam, and Hamburg. Cotton seed, cotton-seed meal and cakes are free from duty.

Cotton-seed linters are not used in this district.

PRODUCTS THAT COMPETE.

Cotton-seed oil as an article of food was driven out of this market by a mixture of East Indian sesame and peanut oil, selling at 78 to 90 cents a gallon wholesale, or 86 cents to \$1.12 retail. Merchants estimate that the quantity of these oils used in this district as table and salad oil is 600,000 quarts a year.

Cotton-seed meal and cakes (mostly meal) as food for dairy cows of meals and cakes, all by-products of the oil and soap factories. These are mostly manufactured in Germany, but they come also from Holland, Russia, Hungary, and Africa. The chief competitors in this consular district are shown in the following table:

ARTICLES THAT COMPETE WITH COTTON-SEED MEAL AND CAKES.

Article.	Price per metric ton.*
Linseed meal and cake	Dollars.
Peanut-shell meal	35
Cocunut pulp	16 to 34
Indian rape-seed cake	32
Turnip-seed pulp cake	33
Fattening mixtures, "Gundol," for horses and cattle	39 to 41
Brewery malt (dried)	29
Distillery rye residue (dried)	80

* A metric ton equals 2,024 pounds.

* Imported from East Indies.

Brewery malt and distillery rye residuum are sometimes adulterated with lime and thereby made injurious to cattle, and the quantity used is diminishing. The value of the "concentrates" above mentioned, mostly by-products of the oil and soap industry, is estimated at \$1,000,000 a year. The demand for these foods fluctuates with the root crops and with the prices of bran and barley. In 1906 the root and potato crop was good, and there was less demand for the artificial foods than in 1905.

OBJECTIONS TO AMERICAN PRODUCTS.

I am informed that American cotton-seed oil was introduced here some twenty years ago and soon became so popular that it largely took the place of the turnip-seed oil and poppy-seed oil at that time used as a substitute for olive oil, especially by the poorer classes. It was sold at 80 to 85 cents a gallon retail, as a table oil. In later years it has been almost entirely superseded by East Indian peanut and sesame oil. One explanation of this is said to be that the American cotton-seed oil loses its color and brightness in cool weather, and in cold weather becomes thick like sirup. The East Indian peanut and sesame oil (sold as Speiseöl, a table oil) is manufactured from Indian seeds in the large oil mills along the Rhine, Main, and Neckar; especially at Ruhrort, Oberursel, Mayence, Mannheim, and Heilbronn. These cities mostly supply western and southern Germany. The oil sells from 76 cents to \$1.05 a gallon wholesale; 82 cents to \$1.15 retail.

One important reason for the success of the German table-oil manufacture lies in the expert blending and mixing of the sesame, peanut, walnut, poppy, and other oils, which improves the oil not only in taste but in its color and keeping properties. The matter of blending should be carefully considered by American producers hoping to gain the German market.

American cotton-seed meal and cakes were introduced here some fifteen years ago and became very popular as feed from the increased amount of milk they produced. But later the Indian cotton-seed and palm-kern cakes became strong competitors for the market, because

they were sold from \$2 to \$3.50 less a ton. Moreover, the American meal and cakes were often adulterated with Indian and other meals, containing impurities and even chemical poisons, which caused the death of many dairy cows, consequently many farmers returned to bran, barley meal, roots, and turnips. The distrust as to the purity of cotton-seed meal and cakes and as to the honesty of the dealers has caused the farmers to order almost entirely through the Rhine Farmers' Union at Neuss, where every carload is thoroughly tested by agricultural chemists, and a guaranty is given with each filled order.

HOW TRADE MAY BE PROMOTED.

Some think that an excellent business for American cotton-seed meal could be built up if the dealers would establish a standard brand, guarantee purity, sell in lead-stamp closed sacks, stamp the sacks with the name of the producer, and send with each sack an analysis of the contents.

The farmers of the Rheinland and Westphalia are mostly organized into the Rhine Farmers' Union and have great confidence in the recommendations of the head offices at Neuss on the Rhine and Münster, Westphalia. It would be a good way of introducing standard cotton-seed products to sell them through the Rheinischer Bauernverein, Neuss am Rhein (Abteilung Kunstfutter), and the Westfälischer Bauernverein, Münster, Westfalen (Abteilung Kunstfutter).

ANNABERG.

SMALL MARKET AND SMALL POSSIBILITIES.

Consul George Nicholas Ifft, of Annaberg, writes as follows, on March 6, of the market in his district:

Cotton-seed oil is barely known to the trade in this consular district and scarcely at all among the people. A few of the larger dealers offer it for sale, but sell very little of it. They furnish quotations of first quality cotton-seed oil in bulk at 120 to 160 marks per 100 kilograms (\$28.50 to \$38.08 per 220.46 pounds), and a poorer grade at 10 per cent cheaper, and offer it for sale at retail at 38 to 48 cents per 2.2 pounds. Cotton-seed cake or meal and cotton-seed linters are not known. There are neither importers nor wholesale dealers in the Annaberg district and statistics for the district as to the amount of cotton-seed oil or of such oils and greases as it might compete with are not obtainable.

A considerable amount of vegetable oils, vegetable butters, and margarines is used as substitutes for lard and butter, and some brand thereof is on sale in all the shops. These shops are almost without exception very small concerns and are scattered throughout the hundred or more mountain villages of the district. The business of each individual shop is trifling. Supplies are bought from the wholesale dealers at Chemnitz or Leipzig or from the importers at Hamburg or Bremen. Butter is expensive and retails at average prices of 2.60 to 3 marks per kilogram; lard at an average price of 2 marks per kilogram. Half a dozen brands of margarine are on sale, all more

or less similar in composition, retailing at 1.60 to 1.80 marks per kilogram, and several brands of so-called "palm butter," which sell a shade cheaper, at 1.40 to 1.50 marks per kilogram. They are much used for cooking, as substitutes for butter, lard, etc. Most of them are German products, but some are made in Holland or Belgium.

Olive oils on sale are almost entirely of French origin, and in bulk sell at 140, 150, and 180 marks per 100 kilograms, according to quality. They retail at 1.80 to 2.20 marks per kilogram. These, when labeled as such, must be pure. Much larger quantities of so-called "table oils," which are a shade cheaper, are sold. These are almost invariably adulterated. Italian and Spanish olive oils are sometimes, but rarely, seen in the shops.

Linseed oil and poppy-seed oil are also used for cooking and as table oils. The former is quoted at 80 to 100 marks per 100 kilograms and the latter at 120 marks per 100 kilograms. The linseed oil sold here is entirely a German product, while the poppy oil is partially of German and partially of Dutch origin. Some flax is raised in this district and there are half a dozen linseed-oil mills. All are small concerns and handle only the local seed crop.

The only oil cakes known in this district are linseed cakes and are in some demand as stock feed. They retail at from 40 to 50 pfennigs per kilogram (9½ to 12 cents per 2.2 pounds). The demand is small.

CONDITION OF THE PEOPLE.

Annaberg-Buchholz is the only city of any size in the district. With its immediate suburbs, it has a population of about 35,000, and a half dozen villages, all within 2 miles of the Annaberg market square, bringing the population within such radius up to about 50,000, or more than one-fourth the entire population of the district, which lives in small towns and villages scattered over a mountainous section of about 300 square miles in extent. The land is not highly productive. A little wheat, rye, oats, barley, flax, and some potatoes are raised, and the forestry products furnish means of livelihood for a small per cent of the people. The population is many times what the resources of farm and forest will support, and the greater part of the people are engaged in the manufacture of dress trimmings, braids, laces, fringes, beaded novelties, etc., for the export trade, the raw materials for which are bought from wholesalers in other parts of Germany. Much of the work is done in the homes, the labor of the entire family being necessary to eke out a scanty living.

The large proportion of "house industry" prevents anything like effective organization among either the workers or the manufacturers, thus keeping both wages and prices low. Overpopulation increases competition and still further reduces prices of product and at the same time wages. Practically all foodstuffs—meat, eggs, butter, vegetables, fruits, etc.—must be brought from a distance, and the cost of transportation is high.

These conditions create the demand for cheap substitutes for butter, lard, etc., but the demand is small and will always remain so. In my opinion the demand for cotton-seed oil could be considerably increased throughout this district by proper advertising; but even if it displaced all other vegetable oils and bogus butters the total would be a small item.

BARMEN.

COTTON-SEED OIL AND CAKE EXTENSIVELY USED.

Consul George E. Eager writes from Barmen under date of March 14:

Three American cotton-oil companies are well and favorably known to the German trade and are represented in this country either by branch offices or commission houses. The largest importing firm is said to be the Holland-American Cotton Oil Company, of Rotterdam, which to some extent controls this market.

Both cotton-seed oil and meal or cakes are used extensively in Germany. The imports of oil from America between March 1 and the end of December, 1906, amounted to 50,188,600 pounds. England exported to Germany during the same period about one-quarter of that quantity, 12,697,150 pounds. The prices of cotton-seed oil are as follows: For edible oil, \$14.28 to \$16.66 per 100 kilograms (220 pounds), to which must be added duty of \$2.98 per 220 pounds; cotton-seed oil for industrial purposes, denatured with oil of rosemary, costs from \$12.85 to \$13.80, with duty of \$1.19, per 100 kilograms.

Linters are used in agricultural sections for the feeding of stock. They are imported from America packed loosely in sacks, because if pressed they would be liable to spontaneous combustion. They are ground into meal and pressed into cakes here in German mills. This cake is called "Leinkuchen." One firm, known as the "Netherlands Oil Mill," disposes of its cake to the neighboring towns of Suchteln, Strahlen, Cleve, Uerdigen, and Kempen. Linters are admitted free of duty.

Cotton-seed cake is imported from America and comes into competition with the German leinkuchen. Of the amount imported in 1906, 317,771,600 pounds came from America. Prices per 100 kilograms were from \$3.57 to \$4.76. Quotations for cakes (March 14) are \$34.27 per 1,000 kilograms at Neuss mills.

Cotton-seed oil comes in competition with linseed oil in the manufacture of soap. In the manufacture of margarine a mixture of 16 per cent of cotton-seed oil with sesame oil and peanut oil is permitted by law. The prices are: Peanut oil, quality "Rufisque," \$23.32 per 100 kilograms; quality "Holland delfte," from \$24.75 to \$25.20. The duty is \$2.98 per 220 pounds.

There has been a decided increase in the importation of cotton-seed products into Germany in the past few years. Owing to the production of olive oil in France and Italy being insufficient to meet the demands, it is well known that other oils, including cotton-seed oil, are largely used for mixture with the olive oil.

Several factories have been built recently for the manufacture of oil and cake from imported seed here in Germany, and it is reported that mills at Harburg, Uerdigen, and Bremen are already in operation and importing seeds from America and Egypt.

BERLIN.

LARGE IMPORTATIONS BY THE EMPIRE.

In a report dated at Berlin, April 11, Consul-General A. M. Thackara points out that notwithstanding Germany is one of the greatest producers of oil in Europe, to supply the demands of the home consumption for food, industrial, and agricultural purposes, oil cake and meal have to be imported annually. The consul-general says:

According to American statistics, in 1906 Germany was our largest customer for oil cake and oil-cake meal, with a value of \$5,168,155, while in cotton-seed oil this country ranked third, with \$1,444,905, the Netherlands and France being first and second, respectively. There are no statistics published regarding the consumption in Germany of cotton-seed oil, cotton-seed cake, and cotton-seed meal, but in 1905 the German imports were 12,334 tons of cotton seed, 58,564 tons of cotton-seed oil, and 583,107 tons of oil cake and meal of different kinds, cotton-seed cake and meal not being specially mentioned. The exports of cotton seed and cotton-seed oil during the same period were merely nominal, and those of the various kinds of oil cake and meal, including cotton-seed cake and meal, 180,439 tons.

EXTENT OF THE TRADE.

The quantity and values of cotton-seed oil imported into Germany in barrels during the past three years, pure and denatured, together with the part which the United States shared in the trade, are shown in the following table:

IMPORTS OF COTTON-SEED OIL INTO GERMANY, 1904-1906.

Description.	1904.		1905.		1906.
	Quantity.	Value.	Quantity.	Value.	
Pure.....	Tons. 20,963	Dollars. 1,811,180	Tons. 29,318	Dollars. 2,121,770	Tons. 31,418
Denatured.....	18,670	1,488,472	29,246	1,866,824	25,175
Total.....	89,638	8,249,652	58,564	4,108,594	56,593
From United States.					
Pure.....	20,396	1,762,092	29,019	2,100,273	.....
Denatured.....	11,424	918,264	22,380	1,529,941	.....
Total.....	31,820	2,680,356	51,399	3,630,214	46,564

From the above figures it will be seen that the United States furnished the great bulk of the German imports of cotton-seed oil, or an average of about 80 per cent of the total. Great Britain came next, while a certain amount, but of no great importance, was received from China. The exports of the product were insignificant.

As of possible interest and as indicating the extent of the German oil trade and industry, in the following tables are given the imports and exports of oils, oil cake and meal, oil seeds, and fruits for the

years 1904 and 1905, the latest years for which statistics are available at this time:

IMPORTS AND EXPORTS OF OILS, OIL CAKE AND MEAL, AND OIL SEEDS, 1904 AND 1905.

Article.	1904.		1905.	
	Imports.	Exports.	Imports.	Exports.
Oils.	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Fatty oils, except edible, in bottles.....	22.5	114	22.5	96
Edible oils in bottles.....	822.0	101	316.0	145
Olive oil in casks.....	3,575.0	159	2,588.0	129
Linseed oil in casks.....	4,456.0	49	3,355.0	126
Oleic acid refuse oil.....	16,729.0	244	20,032.0	145
Denatured olive oil in casks.....	8,515.0		6,389.0	
Palm oil, palm butter.....	12,623.0	240	9,236.0	96
Palm-nut oil, coconut oil, etc.....	6,528.0	41,662	4,538.0	37,650
Rape-seed oil in casks.....	198.0	8,365	161.0	7,325
Fatty oils not specially mentioned.....	7,144.0	389	7,068.0	294
Oil cake and meal.	558,558.0	198,204	583,107.0	190,439
Seeds.				
Peanut.....	40,145.0		22,661.0	
Poppy.....	33,612.0	181	34,988.0	67
Rape, mustard, and radish.....	133,294.0	11,706	160,959.0	4,540
Sesame.....	51,313.0		46,439.0	
Dotter, sunflower, and other, not specially mentioned.....	1,742.0	25	2,251.0	27
Cotton.....	17,073.0		12,354.0	10
Linseed.....	462,722.0	13,565	353,482.0	5,318
Palm kernels, copra butter beans, elipee stillengras, etc.....	199,611.0	1,505	210,147.0	3,706

USES OF COTTON-SEED OIL.

In its pure state cotton-seed oil is used in the manufacture of compound lard and margarine, for pharmaceutical and culinary purposes, and to some extent as a substitute for olive oil for the table. What amount is mixed with olive oil and sold as such would be difficult to determine, as the German food laws, like our own, are very strict, and dealers are bound to guarantee the oil they sell to be unadulterated and unmixed. That the German consumer does not always receive olive oil, however, is clearly shown in the following extract from the annual report for 1905 of the Association of Senior Merchants of Berlin, one of the leading commercial organizations of this city:

Our German edible oils, as well as those of foreign origin, including peanut and sesame oils, compete in the market with olive oil. There is still a demand for the finer qualities of the latter, but the inferior qualities are replaced by the above-named edible oils. The layman prefers them on account of their being flavorless, while the small dealers, hotel and restaurant keepers buy them for their great cheapness. The public thinks it is getting olive oil or Provence oil, but receives only vegetable oil substitutes.

The same report, speaking of oil made from peanuts, states:

The demand for the product this year was still greater than the previous year, and its popularity as an edible oil is still growing. Although it has long ago been proved that it is as good in quality as olive oil and much cheaper, yet it has not yet been accepted in the German Pharmacopoeia, and therefore may not be used by the druggists. In the interest of greater cheapness of pharmaceutical products and for the benefit of the German oil producers, it would be desirable to change the regulations so as to permit the druggists to avail themselves of the peanut oil in preparing their medicines.

Technical or denatured cotton-seed oil, together with denatured olive, groundnut, and sesame oil, is used almost entirely for soap-making purposes. It is also used with other fatty oils to a small extent for the manufacture of "Schmelzen" for the wool spinners.

The prices of cotton-seed oil during the past year varied considerably, for March and April delivery, 1907, the ruling prices at Hamburg were \$13.57 to \$13.68 per 100 kilograms (220.46 pounds) for white American oil and \$13.23 to \$13.45 for yellow oil; English oil, \$12.61 to \$12.85. The above prices are on the quay or in warehouse without duties, subject to a discount of 1 per cent for immediate payment. In the manufacture of margarine cotton-seed oil comes into competition with sesame, olive, and groundnut oils. America undoubtedly still produces the finest qualities of cotton-seed oil—especially is this true of the yellow oil—but one of the largest local manufacturers of margarine and compound lard informs me that in the past two years the German oil has improved greatly in quality, and that its use in the preparation of food products is continually increasing. In the soap industry cotton-seed oil has to compete with coconut oil, palm oil, palm-kernel oil, rape-seed oil, and linseed oil.

CAKE AND MEAL.

Cotton-seed cake and meal are used for feeding cattle. Cotton-seed linters are chiefly used by spinning mills for manufacturing inferior goods and by powder factories for making hunting powder and gun cotton. There are no statistics which would indicate the imports of linters into Germany, as they are classed under the general head of cotton waste (Abfalle), the imports of which in 1905 were 55,164 tons, of an average value of 7 cents per pound.

Cotton-seed cake and meal mainly compete with groundnut, sesame, coconut, palm, and linseed cake, which are largely manufactured in Germany and are also imported from Russia and South America and lately from India; also with the different cereals usually employed for fattening purposes.

CUSTOMS DUTIES.

The duties on cotton-seed oil, cake, meal, and the principal competing articles imported into the German Empire are as follows, the duties in each case being for 100 kilograms (220.46 pounds):

Cotton-seed oil, in barrels, \$2.97; in receptacles other than barrels, \$4.76; officially made unit as an article of food, \$1.19.
 Rape-seed oil, in barrels, \$2.86.
 Linseed oil, in barrels, 95 cents.
 Beech-mast oil, groundnut oil, poppy-seed oil, niger oil, sesame oil, and sunflower oil, in barrels, \$2.38; in other receptacles, \$4.76.
 Sesame oil officially made unit for food, \$1.19.
 Olive oil, pure, in barrels, \$2.38 (Italian oil free); in other receptacles, \$4.70; (Italian oil, \$1.38); made unit for consumption, \$4.76 cents.

Lavet and sulphur oils obtained from the kernels, husks, etc., of olives by treatment with water or bisulphide of carbon, 47.5 cents (Italian oil free).

Palm oil, palm-nut oil, coconut oil, and other vegetable greases, shea butter, Malabar tallow, not intended for food, 47.6 cents.

Cocoa butter, cocoa oil, \$8.33.

Nutmeg butter (nutmeg balsam), laurel oil of a buttery nature, in casks, \$2.14; in other receptacles, \$4.70.

Cotton stearin, \$2.97; for the manufacture of soap or candles, with certificate of permission and under control or officially denatured, \$1.19.

Vegetable tallow intended for food will pay duty as margarine, \$4.76.

Oleic acid (olei), oil dregs, 71.4 cents.

The Italian olive oil by commercial treaty with Germany being admitted free of duty, the oil from other countries having the most-favored-nation clause in their treaties is therefore imported free.

In 1906, from March to December, inclusive, the German imports of olive oil were 5,871 tons, of which only 40 tons paid a duty of 47.6 cents and 62 tons a duty of \$2.38; the remainder was duty free. The principal countries of origin were France, 1,627 tons; Greece, 1,156 tons; Italy, 2,502 tons, and Turkey in Europe, 390 tons.

Under the present provisional tariff arrangement which exists between the United States and Germany there is no discrimination against the American cotton-seed products, as those which are not free are admitted into this country upon the payment of the conventional or treaty rates of duty.

PRICES OF COMPETING ARTICLES.

The prices of cotton-seed products and articles which enter into competition with them vary considerably, according to the market. The following, however, may be taken as the average quotations:

PRICES OF COTTON-SEED AND COMPETING PRODUCTS AT BERLIN, MARCH AND APRIL, 1907.

Article.	Price per 100 kilograms.	Article.	Price per 100 kilograms.
	Dollars.		Dollars.
Oils:		Fats—Continued.	
Cotton-seed—		Tallow, edible	17.14 to 18.38
White	18.68	Butter—	
Yellow	18.45	First quality	92.84 to 96.17
English	12.85	Second quality	47.60 to 49.98
Coconut—		Oil cake—	
China	22.73	Linseed	35.89 to 38.08
Ceylon	20.59	Palm (German)	30.94 to 32.13
Copra	19.75	Cotton-seed	35.18 to 38.89
Linseed	10.96 to 12.14	Peanut	34.61 to 39.27
Olive	19.99 to 40.46	Rape-seed	30.22 to 30.94
Peanut	16.60	Cotton-seed meal	32.18
Sesame	15.47	Bolts, about 95 cents more;	
Rape-seed	16.64 to 17.14	1 per cent for cash.	
Palm	15.71		
Palm-kernel	17.97 to 18.80		
Fats:			
Lard—			
Hamburg	25.70 to 26.18		
American	19.52 to 22.25		
Compound	20.95		

* Per 1,000 kilograms.

The manufacture of products from cotton seed is an American industry which has made wonderful strides in the past few years and is one of great possibilities for the future. To preserve the outlets in foreign lands for the surplus production and thus prevent the home market from being overburdened, it is most essential that a high standard of quality be kept up and that deliveries be made not only in good condition, but exactly as ordered by the foreign buyer.

BREMEN.

COTTON-SEED MEAL HIGHLY VALUED.

The following report comes from Consul William Thomas Fee, of Bremen, under date of April 15:

Bremen, with the exception of Liverpool, is the largest cotton market in Europe. However, there are not any spinning or weaving factories here engaged in the manufacture of cotton goods. All cotton linters are therefore shipped from here to other districts, where they are used in the manufacture of gun cotton, bandaging cotton, hats, and blankets. A large quantity of linters was used for the latter purpose during the Russian-Japanese war. The annual importation of cotton-seed linters via Bremen varies from 300,000 to 350,000 bales, valued at about \$16.66 per bale.

During the year 1905 (statistics for 1906 have not yet been published), 7,947 metric tons of cotton seed were imported via Bremen, valued at \$175,099, of which 3,835 metric tons, valued at \$83,837, came from the United States.

There are two good-sized oil factories at Bremen engaged in the manufacture of cotton-seed oil, both of which were crippled by fire during the years 1905 and 1906. The product of these factories is partly sold in the crude state to inland refineries; the balance is refined here and sold, under different names, as edible oil. German law prohibits the adulteration of articles of food, but it is well known that olive oil is heavily adulterated before exportation, at the places of production and manufacture by mixing with cotton seed, gingili, and other oils.

IMPORTS AND EXPORTS.

During the year 1905 the following vegetable oils were imported and exported at Bremen:

IMPORTS AND EXPORTS OF VEGETABLE OILS AT BREMEN, 1905.

Oil.	Imports.		Exports.	
	Quantity.	Value.	Quantity.	Value.
	Metric tons.	Dollars.	Metric tons.	Dollars.
Cotton-seed	2,888	197,418	8,724	329,711
Peanut	82	4,766	692	85,835
Coconut	678	86,151	4,162	463,491
Palm	396	47,677	377	86,138
Rape-seed	1,541	188,191	1,150	139,074
Gingili	19	2,392	8,662	461,580

The following quantities and values of raw materials used in the manufacture of edible oils and fats were imported at Bremen during the same period:

IMPORTS OF OIL SEEDS INTO BREMEN, 1905.

Seeds.	Quantity.	Value.
	Metric tons.	Dollars.
Cotton.....	7,947	175,099
Peanuts.....	1,969	375,890
Copra.....	12,488	749,929
Palm kernels.....	628	31,027
Gingill.....	6,192	\$84,376

Cotton-seed meal rich in albumen is valued highly as a feedstuff for cattle. The total importation of this article via Bremen during the year 1905 amounted to 52,091 metric tons, valued at \$1,533,859, of which 51,601 metric tons, with a value of \$1,523,353, came from the United States. The cotton-seed meal obtained from unhulled or whole seeds is often used as a fertilizer. The German farmer believes that the small fiber contained in the seed skin or hull is an irritant to the mucous membrane of an animal and becomes injurious to its health. This kind of meal, the lowest grade, is mostly imported from Egypt, Sicily, and Syria. It is of a dark-brown color, while the cotton-seed meal of hulled seed which comes from England and the United States is of a yellow color and is largely used for feeding purposes.

In Germany and in England cotton-seed oil is generally extracted by pressure, while in France the method of extracting the oil by means of bisulphid of carbon is more in use. The meal which remains when the last-named method is employed contains less fatty oils and is therefore considered to be inferior in quality. Cotton-seed meal as a feedstuff competes with peanut cake, palm-kernel cake, cocoanut cake, rape-seed cake, and gingill-seed meal, for all of which articles about the same price is paid as for cotton-seed meal, which latter, however, is decidedly preferred as a feedstuff on account of the high percentage of protein it contains.

CREFELD.

DIRECT TRADE OPEN TO AMERICAN PRODUCERS.

Consul Thomas R. Wallace writes from Crefeld, on March 25, that German mills will purchase direct from American producers of cotton seed if guaranties are given safeguarding contracts and agreements. His report follows:

Cotton-seed oil and cotton-seed cake or meal are used in large quantities in this district and surrounding country, and the by-products of the common or coarse cotton seed are utilized as fertilizers. It is estimated that there are consumed in the Rheinland about 30,000 tons of meal and 6,000 tons of cotton seed, converted into oil, meal, and fertilizer. This estimate seems large, but it is given by one of the best informed men on cotton-seed products I have met and is intended to

cover the territory included on the lower Rhine. The oil is used in soap and margarine factories, the meal for stock food, and the by-products of the common cotton seed are converted into fertilizers. The oil and cake meet with ready sale.

Cotton-seed linters are not used in this district. Millers do not care for the seed when not delinted, and this fact prevents the more general use of the common cotton seed of America. The cotton seed used by the oil mills is sea-island, Egyptian, Brazil, and India production, and is preferred in the order named. The common American cotton seed is inclosed with a heavy covering of lint that prevents its use in the ordinary oil mill. It requires special machinery to remove this husk or covering, but so far none of the mills in this vicinity are provided with such appliances, therefore they do not make use of the seed to any great extent. The by-products are utilized as a fertilizer, but the high prices prevent ready sales; therefore the miller buys but little of this class of seed. All of the millers interviewed say that if the common cotton seed was delinted its use would be largely increased. A member of the firm of one of the largest oil factories here informs me that he has in mind to install special machinery next year for the purpose of preparing the American cotton seed for use.

USE MADE OF COTTON AND OTHER OILS.

Cotton-seed oil is used by the soap makers and margarine factories. It is not used for domestic purposes, and it would require an educational campaign to convince these people of its fitness as a food product, but such facts once established would be rewarded with large sales. A new product called "palmin," used as a substitute for butter or fats for cooking purposes, is meeting with immense success. It is said to be made from the cocoanut. It resembles paraffin in appearance, is put up in paper packages of 1 pound each, and retailed at 16½ cents per package. The sale is increasing wonderfully.

Peanut oil comes in active competition with cotton-seed oil in the margarine factories, and is bought through agents, but I understand the seeds are crushed in Germany and the oil prepared for the market by German factories. Sesame oil is also used in the margarine factories and comes in competition with cotton-seed oil. The manufacturers of margarine say that the price of cotton oil at the present time is too high to admit its use in the manufacture of margarine to any extent. The price for the finest oil for margarine is about \$20.50 for 220 pounds. I do not find cotton-seed oil used as salad or table oil in its pure state; that is, unmixed with other oils. The people do not know it is edible, and it would be difficult to introduce it as a table oil on account of popular prejudice against new foods. Should the fact be made known to them that it is mixed with other salad oils and they now use it, this prejudice would be removed.

The use of American cotton oil in manufacturing soap has decreased on account of the high price. The oil is sold to the soap manufacturers at about \$13.56 per 220 pounds. Lately oil made from maize has become a strong competitor to cotton oil in this branch of trade.

The oils most generally used for salad purposes are "mohn" (poppy seed) and "sesame." Both of these are oriental products,

and because of the low price are more readily sold. Olive oil is preferred by those who can afford the price. Sesame oil is produced from the seeds of a plant of the same name, is grown in tropical and southern Africa, and in east India. The plant is an annual and grows from 1 to 4 feet high. The seeds contain up to 70 per cent oil. It is used as a table oil, and also for the same purpose mixed with olive or mohn oil. It is also used for lighting purposes, cosmetics, and in the manufacturing of soap. The seeds are shipped to Germany, France, England, and Italy. This oil is used here as a salad oil more than any other. It is also more generally used in Asia Minor for all purposes than other oils.

Mohn or poppy seed yields about 33 per cent oil by cold pressing and about 50 per cent from warm pressing. The oil has a pleasant taste and smell, burns slower than other fat oils, gives a very hard white soap, and is used a great deal as a table oil. The Latin name for this oil is "Oleum papaveris."

RELATIVE PRICES.

The following list contains names and wholesale prices of the finest table oils sold in this market. These oils are retailed by the druggist. The prices to the grocery stores are probably a little less, but the quality would not be so fine: Olive oil, \$34.51 per 100 kilos (220 pounds); peanut, \$27.37 to \$29.75; sesame, \$24.28; Mohn or poppy seed, \$22.61. The quality of olive oil used in the manufacture of the finest grade of white textile soap, used by the silk dyers, costs about \$19.04 to \$20 per 220 pounds. A poorer quality of olive oil is used in the manufacture of green textile soap. This is extracted by means of chemicals from the remains of the former oil and costs about \$12.61 to \$14.28 per 220 pounds. Cotton oil could be used in the manufacture of this soap if the price permitted.

The oils used in the margarine factories and the prices of same, ranging from the poorest to the best qualities, are as follows: Sesame, \$15.47 to \$20.94 per 220 pounds; peanut, \$17.85 to \$21.90. The margarine factories are increasing each year in number and the older factories are adding to their capacity with increased production. There are now 80 factories engaged in this business in Germany alone, and their output runs into millions of pounds annually.

FARMERS PREFER LINSEED FOR FEEDING.

The principal article with which cotton-seed cake or meal comes in competition as a feed stuff is linseed cake or meal, and the linseed product has been gradually superseding the former in the last few years. The chief cause assigned for this preference by the farmers is that the demand for milk in this vicinity has increased enormously, and as the linseed meal ration fed to the cow increases the production of milk, the amount of which is much greater than when cotton-seed meal is fed, the farmer finds it more profitable to use the linseed meal. Cattle are not fattened here as in the United States. I have never seen a fat head of cattle or display of fat beef anywhere on the Continent. The animals slaughtered would be classed as common butchers' stock in American markets, and it does not appear that there is a demand for fat beef. The cow is sold to the butcher

as soon as it ceases to be profitable as a milker, and no attempt is made to fatten it for the market. Under these conditions the farmers are using linseed meal in greater quantities in place of the cotton-seed meal formerly used. No pretense is made to raise stock in this vicinity, although each farm is well provided with milch cows. These cows are bought in the cattle districts, especially Holland, and are retained as long as they are profitable as milkers, after which they are sold and fresh cows purchased.

Another cause assigned for the decrease in the sale of American cotton seed and its products is that the quality has become poorer. This is ascribed by one party to the wet year and by another to the fact that larger quantities are used in America and the better grades retained there, while the poorer qualities are exported. The sale conditions are not satisfactory, and if they could be improved the purchases would be made direct with American parties instead of through agents at the seaports.

IMPORTS OF COTTON-SEED AND COMPETING PRODUCTS.

The following lists contain the estimated amounts or values of cotton-seed products and the products that come into competition with them, and are taken from the commercial reports prepared at Rotterdam and Hamburg. The figures represent tons of 2,204 pounds in the first or Rotterdam table and United States dollars in the second:

IMPORTS OF COTTON-SEED AND COMPETING PRODUCTS INTO ROTTERDAM, 1902-1906.

Article.	1902.	1903.	1904.	1905.	1906.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Linseed	103,310	131,669	230,187	163,702	124,636
Linseed cake	103,803	116,351	230,187	114,667	116,036
Groundnuts	24,838	30,231	32,491	24,994	24,759
Palm kernels	21,986	23,231	27,477	14,781	22,172
Cotton-seed oil	6,392	30,231	30,837	66,993	48,025
Cotton-seed meal	32,052	32,187	31,466	25,917	21,216

IMPORTS OF OILS AND OIL CAKE INTO HAMBURG, 1903-1905.

Article.	1903.	1904.	1905.
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Cotton-seed oil	1,322,950	1,802,500	1,899,864
Linseed oil	705,393	484,104	502,213
Olive oil	640,610	754,585	842,154
Palm oil	1,641,450	1,633,672	1,376,005
Cocconut oil	1,301,522	1,098,025	1,092,560
Oil cake, all sorts	7,111,682	6,898,987	7,051,742

MUTUAL GUARANTY DESIRABLE.

One of the greatest incentives to an increase in trade would be the introduction of a method of business mutually guaranteeing business transactions by safeguarding the seller and giving the purchaser an assurance that his contracts and agreements will be faithfully carried

out. The cost of enforcing a contract by parties in a foreign land is usually found so great that it is abandoned, at least that is the experience here. It is the isolated cases of swindling or dishonesty that cause the trouble and create the want of confidence. If associations representing the various lines of business and trade should lend their aid in enforcing contracts and agreements it would go far toward strengthening trade relations and create feelings of mutual good will. The purchaser of a certain line of export goods is in a measure the customer of an association dealing in such goods whether the seller is a member or not, and an interest should be shown in such customer to retain his trade. Large sums are expended by such associations each year to build up a trade in foreign countries in their respective commodities, and to have some dishonest person annul all this work and expense by questionable transactions should not be permitted.

Consul Wallace refers at length to a recent transaction by which German firms were swindled through the issuance of forged shipping papers by parties in the United States, the details of which were published in the daily newspapers of this country and Europe. He writes that the transaction referred to has created a general feeling of distrust among dealers in cotton-seed products in Germany. The consul, in concluding his report, writes:

There are many instances going to show that United States trade suffers by reason of distrust created by the dishonesty described. I have the name of a firm operating a large oil mill, who deal only in cotton seed and who would make all purchases direct from United States producers if guaranties should be furnished safeguarding contracts and agreements. At present this firm makes all purchases through English houses. There are immense possibilities for the sale of American cotton seed and products in this country, and it remains with American producers to secure the trade.

COLOGNE.

LITTLE INFORMATION AVAILABLE.

The following report is furnished by Consul H. J. Dunlap, of Cologne, under date of March 22:

The customs authorities for the district of Cologne report that for the calendar year 1906 1,996,802 pounds of cotton-seed oil and 991,091 pounds of oil cake were entered, but whether the latter was all from cotton seed is not certain.

The meal is sold in competition with oil cake and bran as feed stuff for cattle, but I can not find that it is used as an ingredient of commercial fertilizers. No estimate can be made of the quantity used.

Edible oil is used in Germany in large quantity and is retailed as low as 20 cents per pint. In order to learn if cotton-seed oil was used as a part or in whole for the manufacture of edible oils in this district, I wrote to several manufacturers of such oils, and all who replied stated they had no knowledge of cotton-seed oils being used for any such purpose, but they understood that it was used to some extent in the manufacture of soap and in oleomargarine. As there

are no oleo works in this district, I am unable to tell anything about the quantity if any is used. It is evident that some oil or fat is used in the manufacture of the so-called olive or salad oils made in Germany, for there is no vegetable product grown in the country from which it can be expressed. There are no restrictions by the Government on the use of cotton-seed oil as such in this district.

FRANKFORT.

CHANCE FOR INCREASED SALES.

Consul-General Richard Guenther, of Frankfort, furnishes a report dated March 1, from which the following is taken:

Cotton-seed oil and cotton-seed cake and meal are all used in Germany. Cotton oil comes in competition with olive, peanut, poppy, sunflower, sesame, palm-nut, and coconut oils; also with edible tallow, butter, lard, and oleomargarine. Considerable quantities of the latter are imported into Germany. Cotton-seed cake or meal is not used as a fertilizer in this district. As food for cattle it comes in competition with bran, refuse of malt, rice, potatoes, peanut cake, sesame cake, linseed cake, etc.

It is not to be doubted that the sales of cotton-seed products could be materially increased by proper methods. It can not, however, be done by correspondence, by sending circulars and other reading matter, especially if these are not printed in German. Advertising matter, price lists, etc., of every character should be printed in the German language and quantities and prices stated in these.

It is important to do business in the same manner as is done in the United States by sending out commercial traveling agents with thorough command of the language of the country.

The directory of the industries, trades, and commerce of the German Empire gives the names of 63 cities and towns having one or more factories of oleomargarine, vegetable butter, and oils for table use, etc.; also 860 cities, towns, and villages with one or more soap factories. Feed-stuff dealers are found all over Germany. If the agents for cotton-seed products would personally call upon the manufacturers of edible oils, oleomargarine, soap, etc., and the dealers in feed stuffs and "talk up" their goods, good results would follow.

HANOVER.

TRADE CONDITIONS UNSATISFACTORY.

After briefly describing conditions in his consular district, Consul Robert J. Thompson, of Hanover, reports a feeling among German importers to which American exporters should give consideration. The consul writes, under date of April 2:

Cotton-seed oil and cotton-seed cakes and meal are used extensively and in growing quantities in this district and country. They are

used principally as oil and meal. The latter is used for feeding stock and in the shape of oil for admixture with edible oils, artificial butter, and lard.

Cotton-seed linters are sold here and are used in the manufacture of gun cotton, varieties of wadding, and for chemists' and physicians' borated cotton. Figures on the quantity in pounds and value are not available.

As a feed stuff cotton-seed cake or meal must compete with American corn, palm-seed cakes, linseed and linseed cakes, oats and barley; also sesame cakes and meal and peanut-shell cakes and peanut meal. Waste from sifting cotton-seed meal is used to some extent as a special fertilizer for asparagus beds. Palm-seed cakes are sold at \$28.30 per ton, linseed cakes at \$31.90 per ton, and peanut-shell meal at \$33.30 per ton. Drying kilns for the reclamation of the waste from potatoes used in potato alcohol distilleries are being established throughout Germany, with the view of using the same as a feed stuff for cattle and swine.

COMPLAINTS BY IMPORTERS.

The moral status of the cotton-seed meal and oil trade does not seem to be in a condition satisfactory to the German importer. There is a general complaint against the irresponsibility of the brokers of certain of the southern cities. Charges of bad faith and failure to fill contracts are freely made and claims of inability to collect judgments against the American exporter granted under contract by the Arbitration Board of the Hamburg Association of Feed Merchants are cited by old and established dealers. If this be true the remedy that would at once suggest itself would be the establishment of a penalty clause in the by-laws of the Cotton-Seed Crushers' Association involving the forfeiture of membership of mills or brokers shown to have violated articles of agreement or contracts with foreign purchasers, and particularly so with the foreign purchaser, because of his fear of expense and uncertainty in instituting legal proceedings to recover losses in a foreign state and his lack of facilities for the collection of debts or judgments. The maintenance of confidence in foreign trade is one of the greatest essentials and if the clean and honorable development of a great and growing industry can be furthered by the excision and sacrifice of harmful elements organized provision should be thus made by the cotton-seed interests to protect and promote the trade.

KEHL.

CONSUMPTION IN ALSACE-LORRAINE.

Consul Joseph I. Brittain writes from Kehl on March 20 that cotton-seed cake or meal do not appear to be used there either as feed-stuff or as ingredients of commercial fertilizers.

Aside from the ordinary grains and hay used in fattening cattle and hogs considerable quantities of malt sprouts and dried brewers'

grains are also used, especially in Alsace. Last year more than 6,000 tons of these products coming from the United States were sold in Alsace-Lorraine. There were also about 400 tons of pressed peanut cakes sold to fatten cattle. These, I understand, are made from the residue of the peanuts after the oil has been extracted. The peanut cakes do not come from America, however, but are made from peanuts grown in southern Europe. The American peanut, which is far superior to the European, is not known here to any extent.

Last season upward of 4,000 barrels of cotton-seed oil were sold in Alsace-Lorraine. This, however, was of the unrefined quality. There is very little refined cotton-seed oil imported direct from America. I understand that salad oils in considerable quantities are brought from France and Italy, and that these are olive oils largely adulterated with cotton-seed and peanut oils.

The leading importer of cotton-seed oils in Alsace-Lorraine informs me that at present American cotton-seed oils are obliged to compete against the oils from Egypt, which are inferior in quality to those coming from America, but are now selling at 56 marks (\$13.32) for 220 pounds, while the American oils are selling for 60 marks, or \$14.28, per 220 pounds.

Butter, lard, margarine, and palmin, and also the fat from geese, are the fats used for culinary purposes. The present wholesale prices for tallow are 90 marks (\$21.42) per 220 pounds; lard, 108 marks (\$25.70) per 220 pounds; butter, 168 to 216 marks (\$39.98 to \$51.40) per 220 pounds.

CONSERVATISM OF FARMERS.

The farmers in Alsace-Lorraine and Baden are very conservative and it is difficult to induce them to adopt new methods for fattening their stock or for fertilizing their lands. It has been suggested that the Cotton-Seed Growers' Association prepare literature printed in German, showing the advantages derived from the use of cotton-seed products in fattening cattle, and have such literature distributed from the various stores where grains are sold. In this manner the attention of the farmers would be directed to the benefits in a comprehensive manner.

Natural fertilizers are chiefly used in Alsace-Lorraine and in Baden. The farmers use every particle of manure from the stables and haul out all the contents of the cesspools by the dwellings. The contents of the cesspools are used on the vegetable gardens and on the growing crops. Artificial fertilizers are used more generally in Prussia.

STETTIN.

EXTENSIVE USE OF COTTON-SEED OIL—COMPETITION AND PRICES.

Consul John E. Kehl, writing from Stettin March 11, furnishes the following:

American cotton-seed oil is used extensively here; indeed, the statement has been made that Stettin consumes more cotton-seed oil than any other German city. The bulk of the oil is used in the manufac-

ture of lard compound (hogless lard), which contains from 50 to 70 per cent cotton-seed oil (varies according to the price of beef and mutton tallow), and in the manufacture of margarine, which contains from 10 to 40 per cent of oil, according to the season of the year. The entire import comes in casks containing from 40 to 52 gallons. During the past eight months the price advanced about 72 per cent—from \$10 to \$17.14 per 100 kilograms (220 pounds). Denatured oil, used for technical purposes, sells for \$1 less per 220 pounds.

The import of American cotton-seed meal into Stettin will average about 2,500 tons per year, and is used solely for feeding purposes. The price does not fluctuate so much as oil; \$30.95 to \$35.70 per long ton was the range during 1906. The import into Stettin during 1906 was the heaviest on record—5,547 tons—practically all of American origin. The cause for the increase is attributed to the fact that the importers at Bremen and Hamburg tried to form a ring for the control of this article. Pomeranian and east and west Prussian interests united for the purpose of avoiding this syndicate by making direct increased purchases. The general decrease throughout the Empire is explained by the fact that the general cereal crop for 1905 was, through an extremely wet year, made practically unmarketable, leaving the bulk of the grain in the hands of the farmers, which was used by them for feeding purposes. The year 1907 promises to be very active in the line of imported feedstuffs.

SUPERIORITY OF AMERICAN OIL.

There are four concerns in Germany manufacturing cotton-seed oil. If it were possible, without increased cost of material or transportation, to import American cotton seed without its becoming hot the American manufactured article would come into contact with a destructive competitor. The German oil, mostly of Egyptian and Indian seed, is admittedly of inferior quality and sells from \$3.75 to \$5 per 220 pounds less than the American oil, a difference equal to the import duty and part of the inland freight charges. The English manufactured oil is about the same as the German article in quality and sells, c. i. f., less the import duty, at about the same price as the German oil.

The German law relative to the manufacture of margarine requires that it contain at least 10 per cent sesame oil. This oil, in conjunction with peanut oil, could be used more extensively in the manufacture of margarine, but it is too expensive. The lower qualities of German and English cotton-seed oil are used mostly for the cheaper grades of margarine. The manufacture of margarine in Germany was introduced by the Dutch during the early seventies. Up to that time the export to Germany from Holland had not been deterred by an import duty. Most of the margarine factories are located along the Rhine and secure the bulk of their cotton-seed oil from Rotterdam. There are about 125 manufacturers of margarine in Germany.

OILS THAT COMPETE WITH COTTON SEED.

Cotton-seed oil is not a competitor of olive oil in this section of Germany, but does compete with peanut oil manufactured mostly at

Harburg, and at present selling for \$16.60 per 220 pounds; with sesame oil, selling at \$15.47 per 220 pounds; with rape-seed oil, at \$16 per 220 pounds, and with linseed oil, selling at \$11 per 220 pounds. These oils are of German manufacture. The better qualities are used for edible purposes along the Rheinland. The manufacture of linseed oil in Stettin amounts to from 100,000 to 120,000 hundredweight and rape-seed oil to about 300,000 hundredweight per year. Sesame and peanut oil are not manufactured in Stettin, but mostly in Harburg and Mannheim.

Cotton-seed meal or cake as feedstuff comes into competition with hemp seed, rape seed, linseed, and peanut cake. Rape-seed and linseed cake are manufactured here to the extent of 600,000 and 250,000 hundredweight respectively per year, the former selling at present for \$3 and the latter for \$3.50 per 220 pounds.

The present prices (March 11) per 100 kilograms (220 pounds) of various articles directly or indirectly connected with this report are: Olive oil, \$26.18; edible tallow, \$21.42; butter, \$52.36; lard, \$42.85; lard compound, \$20.95.

PURCHASE AND CONSUMPTION OF LINTERS.

Cotton-seed linters are neither consumed nor imported at Stettin. Bremen and Hamburg form the principal German markets for this commodity. Quite a few German wholesale dealers send their own agents to the American cotton belt. Linters seem to be an article difficult to sell from sample. The German consumer is very reluctant in purchasing from American samples. As a rule the terms are cash against documents, and they have little or no recourse if the goods do not turn out the same as the sample on which purchase was based. I have seen four letters from consumers to a gentleman residing in Stettin who tried to sell by sample. The substance of their replies was that they would purchase, but not on a cash basis, and that they must have some kind of guaranty or protection that the baled goods would be equal to the samples. As far as I can learn, linters are used for shoddy goods, scrubbing rags, quilts, comforts, gun cotton, and like purposes.

NUREMBERG.

MARKET CONDITIONS IN BAVARIA

Vice-Consul Oscar Bock, of Nuremberg, reports that cotton-seed oil is largely used in the kingdom of Bavaria in the manufacture of artificial butter in margarine factories, there being six margarine factories in Nuremberg, one at Regensburg, and one at Munich. He continues, his report being dated February 26:

It is estimated that the six margarine factories of Nuremberg consume annually from 4,000 to 5,000 barrels of cotton oil, seven-eighths of which is of American and one-eighth of English origin. Each barrel contains about 160 kilograms, equal to 396 pounds. The

chief market for American cotton oil for southern Germany is Rotterdam. There are also importing houses at Hamburg and Bremen, but as the best and cheapest route to southern Germany is by water up the Rhine as far as Mannheim or Mayence and thence by rail to its destination in Bavaria, Rotterdam has the preference. The Rotterdam prices form the basis for the sale of cotton oil in Germany, the oil being sold at the original Rotterdam quotations, plus 1 per cent for the broker.

PRICES AND UNDS.

The present price (February 26) for cotton oil for edible purposes; that is, for the manufacture of artificial butter, is \$14.88 to \$15.28 per 220.46 American pounds f. o. b. Rotterdam, prompt delivery. Cotton oil is also used in the manufacture of soap. It is estimated that on the average the soap factories in this consular district consume 800 barrels per year. The present price for light-yellow cotton oil for soap making is \$12.61 per 220.46 pounds f. o. b. Rotterdam, prompt delivery. In addition, there is the German import duty to pay. Freight from Rotterdam to Nuremberg amounts to 57 cents per 220.46 pounds, gross weight.

Cake and meal are not used in this part of Germany, there being no large farms here, such as are to be found in northern Germany. Linseed and poppy-seed cakes and meal, sesame, and peanut cakes and meal have a sale here; but reliable estimates as to the aggregate annual quantity consumed were not obtainable and official statistics on this point do not exist. However, their sale can not be very large, as in Bavaria, the great beer-producing country, the peasants greatly prefer the ground malt (Treber) as foodstuff for their cattle, an enormous quantity of which is produced annually by the Bavarian breweries as a by-product in the manufacture of beer. Linters are not known in this section.

OIL AND ARTIFICIAL BUTTER.

Cotton-seed oil has to compete here with the cheap qualities of the sesame oil and peanut oil. I am informed, however, that in the manufacture of artificial butter the better qualities of cotton oil are preferred to the cheaper grades of the sesame and peanut oils. The margarine manufacturers claim that cotton oil is not only very pure, but combines also readily with the other ingredients and can be exposed to the greatest heat. Under the law in Germany artificial butter must contain at least 10 per cent of sesame oil. I am told, however, that this does not operate to the prejudice of American cotton oil, sesame oil being merely the best means of testing artificial butter. Sesame and peanut oils are also manufactured in Germany. There are four factories in Germany whose goods have a large sale here, viz: Verein deutscher oelfabriken in Mannheim, Bremen-besigheimer oelfabriken in Bremen, Ludwig Hahn in Heilbronn am Neckar, and Carl Hagenbucher & Sohn in Heilbronn am Neckar. There are other concerns in Germany manufacturing these oils, but the oils of the aforesaid four firms are predominant in the Kingdom of Bavaria.

The present price of sesame oil per 100 kilograms (220.46 pounds) is \$16.18 to \$19.04; peanut oil, for technical purposes, \$12.61; peanut oil, for edible purposes, \$18.08 to \$21.42. Reliable estimates as to the aggregate annual quantity consumed and the value of the sesame and peanut oils are not obtainable and official statistics do not exist, as the Kingdom of Bavaria does not issue separate statistics on this point.

INCREASED IMPORTATIONS.

A continual increase in the importation of American cotton oil is noticeable throughout Germany, including Bavaria. The sale of last year, however, did not come up to that of former years, owing to the immense rise in the price of American cotton oil. The quantities consumed by the Bavarian margarine and soap factories stand, however, in no comparison with the immense quantities used by the large margarine factories along the Rhine.

Oelfabrik Gross Gerau, in Gross Gerau, Germany; Brinkmann & Mergels, in Harburg am der Elbe; Emil Boley, in Uerdingen am Rhein; Holtz & Willmsen, in Uerdingen am Rhein, and others import the cotton seeds either from the United States or from Egypt and manufacture a very good oil out of them which, in years like the past, when American cotton oil commanded such a high price, finds a good sale in the margarine factories of this city. In normal years, however, cotton oil imported direct from the United States has the preference, owing to its purity and fine flavor.

WURTEMBERG.

COTTON OIL PRINCIPALLY USED IN SOAP MAKING.

Consul Henry H. Morgan, of Stuttgart, reports that cotton-seed oil which comes to Wurtemberg is imported from Holland and Belgium.

The principal use made of American cotton-seed oil in Wurtemberg is in the manufacture of a white soap. Soap makers who do not manufacture this grade of soap will not use American cotton-seed oil unless the price is at a figure that will compete with English cotton-seed oil and linseed oil. I am informed, however, by soap makers that if the price is such that will enable American exporters to compete with those oils, American cotton-seed oil will always be given the preference, inasmuch as the fatty acids produced from it serve their purpose better.

Approximately there are about 30,000 barrels, or 5,000 tons, of cotton-seed oil consumed in Wurtemberg annually. What part of this may be American oil can not be ascertained. It does not enter into competition with olive oil, lard, butter, or vegetable oils. In the northern part of Germany, however, there is made a cotton-seed oil which is used in the manufacture of oleomargarine.

There is practically no cotton-seed meal used in this Kingdom, the farmers using cake of other oils in preference, such as poppy, sesame, and arachis. A large business, however, is done in linters, which is extensively used by spinners manufacturing cheap cloth, blankets, etc.

ZITTAU.

COTTON-SEED PRODUCTS NOT USED.

Consul William J. Pike quotes from a letter from the president of the Zittau Chamber of Commerce, which body is cognizant of all matters pertaining to industrial concerns of the territory, as follows:

There is no production of cotton-seed oil or cake in this district and the trade plays a very unimportant part. It is therefore impossible to obtain any statistics of cotton-seed products, nor are any reliable particulars regarding consumption and average price to be had.

The current prices per pound for fats and oils, as near as can be ascertained, are as follows: Butter, wholesale, 26 to 28 cents, and retail, 32 cents; lard, wholesale, 14 to 15 cents, and retail, 17 cents; olive oil, wholesale, 13 to 21 cents, and retail, 23 cents; tallow, retail, 10 cents.

COBURG AND DRESDEN.

Consul-General Frank Dillingham, of Coburg, February 18, reports that cotton-seed oil and cotton-seed cake or meal and cotton linters are not used in his district. He also reports that cotton-seed oil does not come in competition with any other oils sold there.

Consul-General T. St. John Gaffney, of Dresden, writes under date of February 19 as follows:

In spite of exhaustive inquiries made, not only among merchants likely to handle such goods, but also the presidents of the chambers of commerce, I am unable to obtain any information as to the uses of such products in this part of Saxony.*

* See report of Consul Carl Bailey Hurst, of Plauen, page 53.

ENGLAND.

BIRMINGHAM.

INCREASED IMPORTS—HOW UTILIZED.

Consul Albert Halstead reports from Birmingham on March 8 that no statistics are available to show the actual quantities of cotton-seed oil, cake meal, and linters used in the Birmingham district. He continues:

Cotton-seed oil is used in Birmingham mainly for soap-making purposes. Unfortunately, information as to the quantities used and as to other oils with which it is mixed has been refused. One large concern replies that it does use cotton-seed oil in its works but will give no details. As this firm manufactures other articles which require oil, I believe cotton-seed oil is also used by it for purposes other than soap making. Grocers of whom I have made inquiry as to the use of cotton-seed oil for edible purposes intimate that they know nothing of its sale for that purpose. An oil for edible purposes called "nut oil," or "nutoline," is being sold here, but I am unable to learn whether or not this is manufactured from cotton-seed oil. Under the British laws an article must be sold for what it really is, and if the grocers and others who sell olive oil know that such oil is combined with another they should specifically state that. Despite this legal requirement, I have been informed, however, that cotton-seed oil is very generally used with olive oil for domestic purposes; in other words, that the two oils are blended. This blending, I believe, is done more in the country from which the olive oil comes than here.

Drippings, which are the clarified fats resulting from cooking, are largely used, as is lard, for domestic cooking, but so far as I have been able to learn no cottonseed oil is used for this purpose. It is also possible that cotton-seed oil under another name may be used for cooking, but that I can not definitely ascertain. Though I have no authoritative basis for the statement and can not verify it, I am convinced that cotton-seed oil is mixed with oils other than olive oil.

PRICES FLUCTUATE.

The prices of cotton-seed oil fluctuate from day to day, so exact quotations can not be given. There has been a decided advance in the price since December, 1906, amounting to about 25 per cent, and indications are favorable for a further rise. This advance is due largely to the heavy increase in the price of tallow, which embarrasses British soap makers not a little, and undoubtedly leads them to use more cotton-seed oil than heretofore. It would appear also as if cotton oil were growing in popularity, for one authority tells me that the use of this product has increased so rapidly that its price would have been higher even if tallow had not reached such a high price.

There have also been large imports of cotton seed for oil-making purposes in the past few months. The receipts for January, 1907, for the whole Kingdom were about 40 per cent greater than for January, 1906. The advance in the price of cotton-seed oil has also been so decided as to make it almost as cheap to use tallow as cotton-seed oil in soap making.

CAKE, MEAL, AND LINTERS.

Cotton-seed cake and meal is used in the United Kingdom very largely for mixing with linseed cake for feeding purposes. The latest quotations for cotton-seed cake in this market were \$22.81 to \$23.11 for the best brands, while English makes were quoted at \$21.38 to \$23.11, and Bombay cotton-seed cake at \$21.80. Decorticated cotton-seed meal brings \$36.49 for the pure cake made by the British Oil and Cake Mills (Limited), and \$25.55 for special digestive meal, while American brands are offered at \$35.28. In 1906, I am informed, the average price of cotton-seed oil was \$23.11 and decorticated cotton meal \$34.06 per ton.

Following are other present prices for feeding cakes, some of which are made from cotton seed or mixed with it: Fattening cake, \$32.84; fattening meal, \$30.41; rearing cake, \$32.23; rearing meal, \$29.80; dairy cake, \$31.62; dairy meal, \$29.19; universal cake, \$31.01; universal meal, \$29.19; decorticated cotton cake, \$39.54; undecorticated cotton cake in bulk, \$24.33; lamb cake, \$32.23. These quotations are per ton of 2,240 pounds.

Cotton-seed linters, one authority says, are not used much in England, and another reports that "the delinting of cotton seed is not carried on to any extent here, as American delinted cotton seed can be bought at practically the same price as the best seed 'au naturel.' Cotton-seed linters are used for the purpose of cleaning woolly seed, but only to a small extent, and no figures are available as to the output."

COMPETITIVE PRODUCTS.

Cotton-seed oil comes into competition in this market with olive, peanut, and other vegetable oils, tallow, butter, etc. It comes into competition with all kinds of oils and greases that can be used for soap-making purposes, especially linseed oil and rape oil. As an edible oil it comes into competition with olive and nut oils. I am told that it is impossible to obtain the definite quantities of these other oils that are used in this section of England. The following are to-day's quotations in wholesale quantities of one hundredweight (112 pounds) for the following grades of butter: Danish, \$27.74; Canadian, American, and New Zealand, \$24.33 to \$25.79. English butter is bought in small quantities for 26 cents per pound. American lard in Birmingham is worth \$12.77 and English \$13.62 per hundredweight.

Margarine can not be sold as butter except at the risk of a severe fine, yet I am told there is not a little sold as butter, and butter fortified with other ingredients is sold as genuine butter. One firm in-

formed me that they had a proposition from an individual who agreed to renovate their old butter and make it as good as new for a very small price, so that it would meet all possible Government tests, and expressed the belief that in the course of this process of renovation cotton-seed oil was used.

Cotton-seed cake comes into competition as a feedstuff with almost every variety of feed for cattle of which linseed cake, Indian corn (maize), Bombay cotton cake, barley meal, and whole wheat meal are examples, but this competition, I am informed, is not serious because of the comparative cheapness of cotton cake. However, when maize and its products are cheap they form a very serious competitor in the sale of cotton-seed cake.

For the manufacture of cotton-seed oil in England there are mills in Liverpool, Hull, and London, all belonging to one combination or company. The use of cotton-seed oil has increased largely in this country since September, 1906. One manufacturer of cotton-seed oil and dealer in cotton-seed cake and meal says:

The consumption of cake meal is decreasing, the reason being that the quality is not so high as formerly. The percentage of fat and protein has been reduced so much that better value in cost per unit is now obtainable in ground coconut, etc. Cotton seed would be used in larger quantities if richer in fat and protein, even if a higher price were charged to compensate the makers for the extra cost.

This is a criticism, it seems to me, that enterprising manufacturers in the United States should seriously consider, ascertaining who is responsible, the American oil and meal makers or the foreign mills.

BRADFORD.

OIL AND CAKE EXTENSIVELY USED.

Vice-Consul Thomas L. Renton, of Bradford, reports March 21:

In this consular district, which embraces the worsted and woolen industries, the cotton-seed oil is largely consumed in making hard and soft soap, in which form it is used for scouring the wool in its various processes of manufacture. Of late years much larger quantities have been utilized in this connection, owing to the restricted supply of tallow, palm oil, and coconut oil, and consequent great rise in the price of these articles, and in view of the fact that it is comparatively the cheapest ingredient in the market suitable for the purpose. Cotton-seed cake is used in much less quantities in the feeding of cattle. As to actual quantities and values coming into this district it is impossible to state. Crushing mills are established at Hull and Liverpool, and the merchants receive their supplies from those centers as required.

COMPETITION AND PRICES.

Cotton-seed oil comes into competition with olive oil, linseed oil, maize oil, and those previously mentioned for soap-making purposes, and with edible tallow and nut oil for edible purposes. The main

articles entering into competition with cotton-seed cake and meal as feeding stuffs are linseed cake, linseed meal, Indian corn, beans, and pease. The current quotations at Bradford for cotton-seed products and the articles with which they compete are as follows:

PRICES OF COTTON-SEED PRODUCTS AND COMPETING ARTICLES.

Article.	Price per long ton.
	Dollars.
Cotton-seed oil.....	125.00
Cotton-seed cake.....	24.00
Cotton-seed meal, decorticated.....	41.00
Linseed oil.....	105.00
Linseed cake.....	50.00
Linseed meal.....	\$7.50 to \$9.00
Tallow.....	185.00
Olive oil.....	\$210.00
Beans.....	\$7.50
Pease.....	\$7.00

a Per tun of 252 gallons.

b Per 480 pounds.

LEEDS.

OIL CAKE IN GENERAL USE.

Consul Lewis Dexter, of Leeds, under date of February 28, makes the following report:

Cotton-seed cake is in general use, and is much appreciated by stock feeders. Cotton-seed meal is used by some as a highly concentrated food, and cotton-seed oil is known to enter into some manufactured articles, as, for instance, into "lardine," a substitute for lard, and, to the extent of about 10 per cent, into "drippene," a preparation used in calf rearing; and also into soap.

There are no means of ascertaining the extent of business done here in these materials, as the crushing and extracting is performed at the mills in the vicinity of the ports to which the seed is sent, notably Liverpool and Hull, and sales in this district are mostly made by agents representing the firms that deal with the seed first hand. It is the refined oil which is used here for soap making, and the present price at Hull is \$124 per ton.

The cakes are chiefly supplied in the following dimensions: Two feet long, 1 foot wide at one end tapering to 9 inches at the other, about 1 inch thick, and having a corrugated surface. Other cakes are supplied in the round form, having a diameter of 15 inches, approximately. Present prices range from \$22.77 to \$23.71 per ton of 2,240 pounds, the former being the price obtainable for cakes made from Bombay seed and the latter for the best cakes, manufactured from Egyptian seed. Cotton-seed oil in its free state is not used here for cooking purposes, but enters more or less into the composition of butter and lard substitutes, such as margarine and lardine.

COMPETITION WITH OTHER COMMODITIES.

With reference to the inquiry as to the oils and greases entering into competition with cotton-seed oil, I append the following table

showing present approximate prices of the various commodities mentioned, as quoted in the markets serving this district. For the sake of reference the prices are worked out at so much per ton, the oils being calculated at 9 pounds to the gallon and 250 gallons to the ton.

PRICES OF COTTON-SEED OIL AND COMPETING ARTICLES AT LEEDS.

Article.	Value per ton.	Article.	Value per ton.
	Dollars.		Dollars.
Cotton-seed oil.....	124.00	Olive oil.....	182.79
Linseed oil.....	114.35	Tallow.....	175.19
Rape oil.....	165.46	Butter.....	486.66
Palm oil.....	160.59	Lard.....	240.88

The competitors of cotton-seed cake as a stock food are linseed and compound cakes of various kinds. The cotton product is considered an economical feed, especially to adult animals, but users say it is "dear" at the present price of \$23.71 per ton of 2,240 pounds, although it compares favorably with linseed cake at \$37.71 per ton. A cheaper form of cotton feed, which could be delivered fresh and as free as possible from husk and fiber, should meet with a good reception.

Cotton cake is not used directly as a fertilizer as is the cake made from the rape seed, but its residual value as manure, after being fed, is high.

Edible oils are not in general demand here, but there are no restrictions against the importation of cotton-seed oil other than those of prejudice in favor of hogs' lard and other well-established products.

BRISTOL.

SUPPLIES DRAWN CHIEFLY FROM THE EAST.

Writing from Bristol March 19, Consul Lorin A. Lathrop reports:

The west of England being largely a grazing country the use of cotton-seed meal and cake is considerable. Direct sea imports of cotton seed into Bristol amount annually to about 50,000 tons, with an approximate value of \$1,500,000. Direct imports of cotton-seed cake exceed 6,000 tons annually, of the value of \$200,000. The imports of linseed cake are somewhat less than this. The sources of supply of cotton seed are Alexandria and Bombay. The demand for Egyptian and Bombay seed is increasing, and the small import from Argentina is expected to develop. The direct importations do not quite represent the consumption, as a proportion of these products reaches Bristol and its neighborhood by rail from other ports. Two local firms of importance grind cotton seed and make cakes, and in the busy season, say from October 1 to the end of March, these two concerns turn out from 4,500 to 6,000 tons per week.

Present quotations for Egyptian cotton cake, free on board, Bristol, are \$25, less 60 cents per ton discount for cash in seven days from date of invoice. Bombay cotton cakes are selling for \$21.87, less the

same discount, f. o. b. Ground Egyptian cotton seed is selling at \$33.53, less usual discount, and ground Bombay seed \$1.20 per ton less. Cotton-seed linters are not used in this district.

COTTON AND LINSEED OILS.

The imports and consumption of vegetable oils other than that pressed from cotton and linseed are not very largely used at the present time. Present quotations for lard are \$12 per 112 pounds. The price of butter for the last six months has been very low, say \$26.50 per 112 pounds, present prices being a shade under \$23. Municipal analysts occasionally institute proceedings against grocers in whose lard cotton-seed oil is found and against sellers of adulterated salad oil, not because of any prejudice against cotton seed, but because the goods are misdescribed on the label. It is, however, some years since I have noted any such proceedings.

Practically the only oil which competes with cotton-seed oil for cattle food is linseed, but this is always mixed with cotton cake, the astringent qualities of the latter counteracting the laxative qualities of the linseed. Compound cakes have come very much to the fore within the last fifteen years, and are more and more used by the British farmer. These compound cakes are accepted as being more digestible for young stock than cotton cake alone, and results, both in fattening and milking, are better. Linseed cakes, 12 to 14 per cent oil, are selling now for \$12.75 per ton of 2,240 pounds f. o. b., less discount. Compounds sell for \$32.50 to \$35.

The increase of imports of Bombay seed has been considerable in the last few years. Its lower selling price has helped to advance its use, but farmers prefer the richer Egyptian oil, and many consider the latter as cheaper in the end. The seed is imported whole, and the oil which is extracted is sold principally to soap manufacturers. No duty is levied on cotton seed or oil cake, nor is there discrimination on the part of the Government against it.

BURSLEM.

COTTON-SEED OIL NOT USED.

Consul Edward B. Walker, of Burslem, reports April 12:

Cotton-seed cake and meal are used extensively for feeding and fertilizing purposes in this consular district, but there is no information available showing the aggregate quantity and value of annual sales. I can not learn that cotton-seed oil is sold or used in this district. The edible oil used is olive oil, coming from France and Italy, and all those of whom inquiry have been made say that they

know of no cotton-seed oil for edible purposes being sold in this section. A representative of a firm operating a number of stores stated that some years ago several dealers were "prosecuted and heavily fined" for selling cotton-seed table oil as olive oil, and that he had not known of its sale since.

Prices for cake and meal range as follows per ton in bags, gross weight: Cakes of decorticated seed—best American brands, \$37.10; selected No. 1, \$37.71; Liverpool makes A1, \$38.93; choice Peruvian, very rich in oil, \$40.15. Undecorticated seed cakes—Liverpool makes, in bulk, \$23.72 to \$25.55; Egyptian, choice quality, \$23.72. Decorticated cotton-seed meal, \$33.46 to \$34.07; cleaned cotton seed, \$37.71; cleaned cotton seed, crushed, \$38.93; cotton-seed oil, per hundred-weight, \$6.69 to \$6.82.

As feedstuff and as an ingredient of fertilizers, cotton-seed cake and meal come in competition with linseed cakes and linseed-cake meal.

The price of oil cake and meal depends to some extent upon the demand for oil, and much "combination" cake (made up of various ingredients) is used. As between the American and English brands of oil cake, the statement is made that for export purposes the American cake is made hard, and that many prefer the softer native brands.

HUDDERSFIELD.

PREJUDICE AGAINST COTTON-SEED OIL.

Consul Frederick I. Bright, of Huddersfield, writing March 28, reports that the principal centers for the seed-crushing industry of England are Hull and Liverpool, from which places the seed oils, cakes, and meals are brought to Huddersfield. The consul writes:

Large quantities of cotton-seed oil are consumed here. It is used in soap making, cooking fish and other meats, in preparing potato chips, in lard and butter substitutes, and as a cheap medium for adulterating purposes. The chief industry of the district being the manufacture of woollens and worsteds, there is a great demand for wool lubricants, which are applied to the wool before it passes through the combing or carding machines. Olive, or Gallipoli, oil has been extensively used for this purpose, but in recent years it has been largely replaced by vegetable oils and oils derived from animal fats, such as tallow and lard oleins and neat's-foot oil. About 2 gallons of oil are needed for every 120 pounds of wool for this purpose. It is generally understood that cotton-seed oil is often used as an ingredient of olive-oil lubricants. The writer was informed on good authority that many olive-oil lubricants were being sold to consumers at prices much cheaper than the pure oil could be purchased at wholesale. These oils are usually sold at retail in quantities from 2 to 10 tons (a ton of 252 gallons).

It is probably true that the demand for cotton-seed oil would be larger were it not for the increased cost of insurance (21 per cent extra) to mill owners using "any mineral oil, oil of pine, linseed,

rape, cotton, or other seed oil or any product of them, or any composition containing them or any of them." The prices of cotton-seed oil are generally cheaper than linseed.

Butter comes from Danish, Swedish, and Irish sources, and seldom, if ever, falls below 25 cents per pound retail. American lard retails at 11 cents per pound. Margarine and buttapat (English made) retail as low as 8 and 12 cents per pound.

Druggists use olive oil in the preparation of camphorated oil (a lotion). Cotton-seed oil is kept in stock and used for various purposes.

There is a prejudice against cotton-seed oil for cooking and table purposes which is probably due to its cheapness and to the tendency to regard it as an artificial substitute for a natural food. It is said that if the odor emitted in its use could not be distinguished from that of lard the demand for it would be greatly increased. The campaign to widen the market for edible cotton-seed oil seems to be largely educational, not only to convince the public that it is as pure and healthy as its competitors, but how and for what purposes it may be utilized. The demonstration method, after the manner of the Texas State Fair exhibition, has been a very successful method of introducing food preparations into this country.

The Huddersfield district is a good market for commercial seed cakes. The demands of a large population devoted to manufacturing interests for milk and its products have converted the few acres of outlying country lands into dairy farms. The district contains many more cattle than are to be found in the less densely populated agricultural portions, and except for grass must depend on other sources for cattle foods. Seed cakes and meals occupy an important place in the cattle feeding of this district. Linseed and cotton-seed cakes and certain mixtures or compound feeding cakes are in general demand by dairy farmers and cow keepers. They are also used for sheep. The rape-seed cake, as such, is not in great favor.

PURE FOOD FOR CATTLE.

Below are five provisions of the law in force here governing the use and sale of artificially prepared cattle foods, taken from the fertilizers and feeding stuffs act of 1893.

(1) Every person who sells for use as food for cattle any article which has been artificially prepared, shall give to the purchaser an invoice stating the name of the article and whether it has been prepared from one substance or seed or from more than one substance or seed, and this invoice shall have effect as a warranty by the seller of the statements contained therein.

(2) Where any article sold for use as food for cattle is sold under a name or description implying that it is prepared from any particular substance or from any two or more particular substances, or is the product of any particular seed or of any two or more particular seeds, and without any indication that it is mixed or compounded with any other substance or seed, there shall be implied a warranty by the seller that it is pure—that is to say, is prepared from that substance or substances only, or is a product of that seed or those seeds only.

(3) On the sale of any article for use as food for cattle there shall be implied a warranty by the seller that the article is suitable for feeding purposes.

(4) Any statement by the seller of the percentages of nutritive and other ingredients contained in any article sold for use as food for cattle, made in an invoice of such article or in any circular or advertisement descriptive of such article, shall have effect as a warranty by the seller.

(5) The sale as food for cattle of any article containing ingredients deleterious to cattle or worthless for feeding purposes and not disclosed at the time of the sale entails a penalty of £20 on a first or £50 on a second conviction.

Large quantities of compound cakes and meals are placed upon the market bearing fictitious commercial names which do not indicate the particular seed or product from which they are made. In complying with the law manufacturers do not give to purchasers the names of the particular seeds or products from which the cake or meal is made, but rather a chemical analysis—for example, as follows:

"*Maxilac dairy meal*."—Moisture, 11.24 per cent; oil, 7.15; albuminous compounds, 19.94; mucilage, starch sugar, etc., 46.33; woody fiber, 9.48; ash, 5.86; total, 100 per cent. Nitrogen, 3.15; equal to ammonia, 3.32.

Compound cakes and meals are generally much cheaper than other cakes and meals, and it is not unlikely that large quantities of the cheaper seed imports enter into their composition. The greater part of the cotton seed is imported from Egypt. Rape seed is used as a food for poultry and "rape dust" as a fertilizer.

American corn and wheat products are very much in demand as cattle foods.

AMERICAN AND EGYPTIAN LINTERS.

American and Egyptian cotton-seed linters are purchased from Liverpool. In the spinning mills they are mixed with shoddy and other materials to assist in making a cheaper and finer woolen yarn than could be made with shoddy alone. Other cottons are largely used for the same purpose. The linters cost less than all raw cottons and generally less than cotton waste. Their cleanliness gives them an advantage over the lower-priced wastes, but their shortness is against their general use.

HULL.

INCREASED IMPORTS OF SEED.

Consul Walter C. Hamm, of Hull, reports, on April 3, that cotton-seed oil and cake are used in all parts of the country. He says:

Cotton-seed oil is used in towns for soap making and to some extent for edible purposes. Cotton-seed cake is used in stock feeding. Prices vary, and it is not possible to give definite information in either case as to the quantity or value of the sales of each per year.

Cotton-seed linters are used for cleaning woolly seeds, but only to a small extent, and no figures are available as to the output.

Cotton oil comes into competition with all kinds of oils and greases that can be used for soap-making purposes chiefly, but more for edible oils. Cotton oil is a competitor with other oils, such as olive and nut oils. Cotton-seed cake comes into competition as a foodstuff with almost every other variety of food for cattle, of which linseed cake and maize would be examples, and is partly a question of price. Again it is impossible to give quantities and values.

Hull ranked for many years as the leading oil-compressing city

in the world, but the cheapness of American cotton oil and cotton cake affected the prosperity of the business here to a material extent. The imports of cotton seed into Hull in 1906 were higher than in any year since 1903. Bombay seed was more in evidence than in the previous year and prices ruled fairly high for this class of seed. Egyptian seed varied considerably, but the close of the year found the market firm. The imports of cotton seed into Hull during the period 1897-1906 were as follows:

IMPORTS OF COTTON SEED INTO HULL, 1897-1906.

Year.	Quantity.	Year.	Quantity.
	Tons.		Tons.
1897.....	207,446	1902.....	291,964
1898.....	216,066	1903.....	229,189
1899.....	177,069	1904.....	234,929
1900.....	205,701	1905.....	208,552
1901.....	217,826	1906.....	221,142

The India cotton-seed crop is stated to be a good one and augmented supplies are looked for from that direction, more especially as cake made from this class of seed is becoming more popular among a certain class of farmers on account of the price, which is less than that of cake made from Egyptian seed. The imports of oil cake were as follows:

IMPORTS OF OIL CAKE INTO HULL, 1897-1906.

Year.	Quantity.	Year.	Quantity.
	Tons.		Tons.
1897.....	13,483	1902.....	14,733
1898.....	17,236	1903.....	15,766
1899.....	24,747	1904.....	21,679
1900.....	16,822	1905.....	30,965
1901.....	13,845	1906.....	44,190

The increase in the imports of oil cake was a substantial one, and if the figures for the last six years are any criterion it appears that the business is steadily increasing.

There was considerable increase in the exports from Hull of cotton oil during the past year. The market fluctuated during the year and at one time \$81.20 per ton was the value, but later in the year the price rose to \$122.50 per ton. The soap combine was partly responsible for this advance. The exports of cotton oil in 1906 aggregated 11,453 tons, the bulk of which went to Germany, France, Holland, and Belgium in the order named.

LIVERPOOL.

IMPORTS FROM UNITED STATES, EGYPT, AND MEXICO.

Consul John L. Griffiths, of Liverpool, reports of date March 19 as follows:

Cotton-seed oil and cotton-seed cake or meal are largely used in England. Raw cotton-seed oil is principally used in the manufacture

of soap. Refined cotton oil is used in the making of margarine, for fish and chipped-potato frying, and in the preparation of salads. Cotton-seed cake and meal are used for feeding cattle. I am informed that the consumption of cake and meal is decreasing, notwithstanding the slight increase of the importations in 1905 over 1904. The reason assigned is that the quality is not so high as formerly, the percentage of fat and protein having been reduced so much that better value (in cost per unit) is obtainable in groundnut cake, cocoanut cake, etc. Meal would be used in larger quantities if richer in fat and protein, even though higher prices were demanded to compensate for the better quality. In 1901 the importation of cotton-seed cake from the United States was 122,137 tons, which decreased in 1905 to 92,330 tons, whereas the importation from Egypt in 1901 was 45,926 tons, which increased in 1905 to 69,363 tons. From Mexico in 1901 the importations were 7,638 tons, compared with 10,476 tons in 1905. Comparing the years 1901 and 1905, the official figures show that the imports of cotton-seed cake from the United States considerably decreased, while the imports from all other countries in total quantity were practically the same. The present price (March 19) of cotton-seed oil is \$136.26 per ton, compared with \$97.33 per ton last year. The price of cotton-seed cake, good, choice decorticated American, is from \$35.27 to \$37.71. The price of English decorticated cotton-seed cake is from \$38.93 to \$40.14 per ton. The seeds imported at this port are already delinted.

Cotton-seed oil competes, as already stated, with butter, lard, and olive oil, but it has a distinct market value of its own here, and the demand is increasing.

COMPETITORS OF COTTON-SEED PRODUCTS.

Cotton-seed cake and meal compete with linseed cake as a cattle food. The present price of linseed cake is from \$34.66 to \$36.49 per ton. During the year 1905 the importations of cotton-seed oil increased from 10,553 tons to 14,687 tons, or 4,134 tons. The total quantity of cotton-seed cake or meal imported into England during 1905 was 172,169 tons, and in 1904 169,399 tons, an increase of 2,770 tons. From 1904 "Oil seed" is shown in the British Government statistics under the separate headings of "Cotton-seed oil," "Linseed oil," and "Other sorts." Prior to that year these classifications appeared under the heading "Oil seed," so that comparison can be made only with 1904 and 1905.

ENGLISH CRUSHING MILLS.

As before stated, the imports of cotton-seed products into this country have not increased during the last five years. Very small quantities of cotton oil are sent here. There is, however, a very large quantity of cotton-seed oil produced in this country from the seed, one factory alone turning out an average of 78,000 tons per year. In 1905 only 12,726 tons of unrefined and 5,563 tons of refined or edible cotton oil were exported, so that the home consumption must be large. Olive oil is not in great demand and is principally used for salads. In 1905 the imports were, unrefined or raw, 7,600 tons; refined or edible, 4,352 tons. Olive oil is not produced in this country. There is no doubt that cotton-seed oil takes the place of olive

oil in many instances when people simply purchase "salad oil" without further inquiry. Of course, if olive oil is asked for, cotton-seed oil can not be substituted, the foods and drugs act preventing such deception. The present price of olive oil is \$204.39 per ton, as against \$136.26 per ton for cotton-seed oil. There is no discrimination, so far as I can discover, on the part of the Government against cotton-seed oil.

LONDON.

OIL USED IN LARGE QUANTITIES.

Consul-General Robert J. Wynne, writing from London March 12, reports briefly and in general terms on the trade in England. The report in part follows:

Cotton-seed oil is used in considerable quantities in this country and largely for frying purposes. A large quantity is used also for packing and canning. The imports in tons in the years named are shown in the following table:

IMPORTS OF COTTON-SEED OIL INTO GREAT BRITAIN.

Year.	Quantity.	Year.	Quantity.
	<i>Long tons.</i>		<i>Long tons.</i>
1900.....	41,131	1903.....	35,011
1901.....	45,842	1904.....	\$2,100
1902.....	53,454	1905.....	\$8,158

Most of the oil consumed in this country is crushed in the United Kingdom from Egyptian or Bombay seed. It is possible to refine the former to make an edible oil. Oil from the Bombay seed, called "pale oil," not being sweet, can be used only for technical purposes. Sweet oil is principally used for fish frying and similar edible purposes. The pale oil, which is nonedible, is principally used for soap making, burning, for making "lardine" (thickened cotton oil), which is used as a lubricant.

PRICES AND COMPETITION.

The present price of sweet cotton oil is \$6.69 per hundredweight, and of pale cotton oil \$6.51 per hundredweight, both packed in casks of about 7 hundredweights gross, discount $2\frac{1}{2}$ per cent; if packed in barrels for export, 12 cents per hundredweight (112 pounds) more.

Sweet cotton oil competes with olive oil, groundnut oil, sesame oil, and other sweet vegetable oils, edible tallow, etc., for edible purposes, and in the manufacture of margarine. Pale cotton oil competes with coconut oil, ordinary tallow, bone and other greases, fish oils, etc., for soap making; rape oil for burning, and rape, mineral, and castor

oils; also olive oil for lubricating. The nearest values for these articles are about as follows:

PRICES OF COTTON-SEED OIL AND COMPETING ARTICLES.

Article.	Price per 112 pounds.	Article.	Price per 112 pounds.
Cotton oil:	<i>Dollars.</i>	Fish oils.....	<i>Dollars.</i>
Sweet.....	6.69	Rape oil, burning and lubricat- ing.....	8.06
Pale.....	6.51	Castor oil, lubricating.....	8.28
Olive oil.....	9.98	Groundnut oil.....	7.50
Edible.....	9.25	Cocunut oil.....	9.58
Sesame oil.....	5.35 to 8.52	Bone grease.....	7.30
Tallow:		Mineral oil, lubricating.....	34.07 to 73.00
Edible.....	9.18		
Ordinary.....	8.75		

MANCHESTER.

INCREASING MARKETS FOR COTTON-SEED PRODUCTS.

Consul William Harrison Bradley, of Manchester, reports, March 15:

There is a large and increasing use of cotton-seed oil, cake, and meal in England. The oil is used for edible purposes—in dairies, as salad oil, etc.—while a small proportion is used in the manufacture of soap. The increased price, however, has caused the refined American oil to be left almost entirely to edible purposes. I find that quite an amount is used by the many cheap restaurants, called "fried-fish shops," all over England.

Oil from seed imported from various countries and crushed in England seems to be the only oil used for other than edible purposes. Cotton-seed cake is used as feed for animals; cotton-seed meal is used for the same purpose and also as an ingredient in fertilizers. Cotton-seed oil is quoted at present at from \$7.30 to \$8.76 per hundredweight (112 pounds), according to quality; cotton-seed cake at from \$36.49 to \$39.54 per ton, and cotton-seed meal at \$34.06 to \$35.28 per ton. I do not find statistics as to the total importation of cotton-seed oil into England, but to this district there came during the year 1906, 4,642 barrels, practically all from the United States.

Cotton-seed linters have a limited use as cotton waste in some kinds of spinning, shoddy, blankets, wadding for surgical purposes, and in the making of felt hats. Account is not kept of its importation in the annual statements, but importers tell me that about 4,000 bales would be the limit of amount used here. The bales are of 500 pounds weight and the present price for good average quality is 5 cents per pound.

Cotton-seed oil comes in competition with fish oil, coconut oil, olive oil, palm oil, linseed oil, rape-seed oil, grease, and tallow.

There is no way of ascertaining the amount of animal fat produced in England as the slaughterhouses are at present managed.

Present prices are: Olive oil \$243.32 and peanut oil \$218.99 per ton; edible tallow, \$194.66 to \$209.25 per ton; lard, \$240.88 per ton; butter, \$436.65 to \$545.04 per ton.

Cotton-seed cake and meal come in competition with English manufactured cotton and linseed cake, as well as cake and meal imported from other countries.

The total imports of cotton-seed cake into England for the year 1905 was 182,679 tons, of which the United States supplied 92,330 tons. There is a large and increasing market for cotton-seed products and no discrimination against cotton-seed oil.

IMPORTS OF OIL SEEDS AND OILS.

The following returns, taken from the foreign and colonial statistics of the United Kingdom, give the amount and value of oil seeds and oils imported during the year ended December 31, 1906, compared with 1905:

IMPORTS OF OIL SEEDS AND OILS, 1905 AND 1906.

Articles and countries.	Quantity.		Value.	
	1905.	1906.	1905.	1906.
<i>Seeds.</i>				
Cotton seed:			<i>Dollars.</i>	<i>Dollars.</i>
Egypt.....do.....tons.	385,615	362,592	10,311,140	11,354,892
Other countries.....do.....do.	183,313	262,175	4,199,494	6,731,780
Total.....do.....do.	568,928	624,767	14,470,634	18,086,672
Flax or linseed:				
Russia.....do.....quarters.	206,780	170,731	1,964,642	1,675,316
United States.....do.....do.	9,445	86,106	87,650	972,728
Argentina.....do.....do.	967,980	553,323	5,476,338	5,513,719
British East Indies.....do.....do.	611,053	494,951	5,655,836	5,000,011
Other countries.....do.....do.	126,800	286,940	1,329,329	2,518,951
Total.....do.....do.	1,924,068	1,588,100	17,233,896	15,907,726
Rape seed:				
Russia.....do.....do.	35,690	10,985	223,401	82,905
British East Indies.....do.....do.	91,918	87,840	759,719	861,409
Other countries.....do.....do.	53,718	19,324	409,053	197,666
Total.....do.....do.	181,326	118,149	1,392,173	1,141,989
<i>Oils.</i>				
Refined or edible:				
Cocunut.....do.....hundredweight.	92,651	202,491	701,199	1,553,873
Cotton-seed.....do.....tons.	12,341	10,884	1,099,055	1,195,022
Olives.....do.....do.	4,352	4,467	869,742	1,050,130
Palm.....do.....hundredweight.	34,989	62,684	217,568	377,499
Total.....do.....do.			2,917,504	4,216,524
Seed:				
Cotton, unrefined.....do.....tons.	8,309	1,786	256,431	163,481
Linseed—				
Pure.....do.....do.	9,117	17,056	796,646	1,679,112
Not pure.....do.....do.			1,605	146,306
Rape.....do.....do.	10,992	11,000	1,109,454	1,340,336
Olives.....do.....do.	5,708	4,627	688,614	620,483
Other oils:				
Fish.....do.....do.	25,508	27,808	2,033,870	2,314,512
Cocunut.....do.....hundredweight.	613,165	335,541	4,008,304	2,855,955
Olives.....do.....tons.	7,590	9,419	1,245,718	1,556,686
Palm.....do.....hundredweight.	1,144,568	1,223,787	6,394,976	7,077,068

EXPORTS OF OILS.

The exports of refined or edible oils in 1906 were valued at \$2,861,034 against \$516,952 in 1905. Of the former amount \$2,003,937 was cotton-seed oil, against \$462,648 in 1905. In 1906 the value of unrefined or raw cotton-seed oil exported was \$16,093 and in 1905 \$1,009,978.

NEWCASTLE-ON-TYNE.

ALLEGED ADULTERATION BY AMERICAN MILLS.

Consul Horace W. Metcalf reports as follows from Newcastle-on-Tyne, March 25:

Following are the returns given by the river Tyne commissioners of cotton and linseed cake and meal imported into the river Tyne during the year 1906, from the countries named, in tons of 2,240 pounds: United States, 100 tons; Germany, 220; Holland and Belgium, 4; Russia, 240; coastwise, 1,976; total, 2,540. In the same year there were imported 26 tons of cotton and linseed meal, of which 25 tons were coastwise.

Cotton seed is used in this country as the source of oil which, when expressed, is used in soap making and for adulterating animal fats and oils. Prices of English oil at present are from \$131.40 to \$141.13 per ton. The import value of American oil is \$153.29 to \$163.02 per ton. The residue or oil cake is used for cattle feeding. There are no oil mills in this district, and the chief center of oil-seed crushing on the east coast is Hull. Cotton-seed linters are unknown here.

In this district there has been a decrease in the importation of cotton-seed cake and cotton-seed meal.

In answer to the sixth interrogatory of the circular, a large firm reports: "The trade in decorticated cotton-seed meal and decorticated cotton-seed cake has been decreasing from year to year, so far as this district is concerned, chiefly on account of the adulteration now practiced by American millers by grinding up and otherwise mixing the useless hulls of the cotton seed with the cake and meal. In former years, when this industry was started, we got really decorticated cotton-seed meal and cake of bright canary yellow color, containing a large percentage of oil and albuminoids, which make them highly valuable as feed for cattle. The quality has been deteriorating from year to year. In the last two or three years the shipments made from the Southern States ports, chiefly New Orleans, which is usually called 'Prime' decorticated cotton-seed cake and meal, have been scandalous, and have caused no end of trouble and disputes."

NOTTINGHAM.

LARGE QUANTITIES CONSUMED.

Consul Frank W. Mahin, of Nottingham, reports, under date of February 28:

According to the estimates of large dealers, between 20 and 30 tons (2,240 pounds) of cotton-seed oil are used in Nottingham and immediate vicinity per week in the manufacture of soap, margarine, and confectionery, and by cheap lunch stands in frying fish and potatoes. The price has varied greatly, having been as low as \$4.38 per hundredweight of 112 pounds, while now it is \$6.33. The aggregate quantity per year used in this locality is estimated at from 1,040 to 1,560 tons, valued at \$131,590 to \$197,385.

At Leicester some of the olive oil used is adulterated with cotton-seed oil. The consular agent there thinks it likely there would be a good opening for cotton-seed oil as a lubricant in the hosiery trade if it were refined and clarified so as to leave no stain on textile fabrics. Cotton-seed linters are unknown in this district, according to all informants.

COMPETITION WITH OTHER PRODUCTS.

Cotton-seed oil competes with practically everything resembling it which can be used for similar purposes, because it is usually cheaper. The wholesale price of cotton-seed oil is about 50 cents a gallon, or about $5\frac{1}{2}$ cents a pound; of olive oil from \$1 to \$1.40 a gallon, and of lard from 8 to 12 cents a pound. Linseed oil is quoted at from 32 to 40 cents a gallon, and is, therefore, cheaper than cotton-seed oil. There are no data as to the quantity of any of these competing articles used in this district and dealers will not venture to give an estimate.

Enormous quantities of cotton-seed cake and meal are consumed in this county, but no figures are obtainable—not even a guess from the principal dealers. The most common form is a compressed flat cake, either wedge shaped or square. It is fed to stock. Practically all the farmers in this vicinity use it. The price is from \$34 to \$39 a ton of 2,240 pounds. Competing articles are linseed cake, \$42.58 a ton; rice meal, \$27.86 a ton, and compound feed cakes, \$34 a ton. Large quantities are used, but figures are unobtainable.

MARKETS OF DERBY AND LEICESTER.

It is estimated that about 40 tons of cotton-seed cake are sold per week in the locality of Derby in the spring and about 20 tons per week the rest of the year, when it is used in conjunction with linseed cake. The consular agent at Derby further states: "The article which sells best is known as 'Egyptian cotton-seed cake,' the next best in point of quality being that which is sent from Bombay. Not much ordinary cotton-cake meal is sold in this district. The compound cakes contain a large proportion of ordinary cotton-cake meal, and compound cakes are largely sold here. Some of the better class of farmers also buy decorticated cotton cake and decorticated cotton-cake meal. This is rich in oil and albuminoids. The present price of Egyptian cotton cake is \$25.55 per ton, decorticated cotton cake \$42.58 per ton, and decorticated cotton-cake meal \$40.15 per ton."

At Leicester cotton-seed cakes, and linseed cakes in smaller quantity, are used for feeding cattle. The oil used generally by painters is a linseed product and comes chiefly from the Baltic provinces. The consular agent says he can not learn of any use of cotton-seed products as an ingredient of fertilizers. The quantities of both cotton-seed oil and cake used in this district are increasing.

There is no production of edible oils in the district. Much the larger part of the cotton-seed oil used comes from the United States, except at Derby, where oil from British dependencies is reported to be supplanting American oil. A comparatively small quantity of Egyptian and East Indian cotton-seed oil is also consumed in this county. A greater quantity of cotton-seed cake comes from Egypt

than from the United States to this district. A smaller quantity comes from India, and is of inferior quality. There is no discrimination on the part of the Government against cotton-seed products of any kind. This district makes no direct importations of cotton-seed products, purchases usually being made from importers at Hull and Liverpool.

PLYMOUTH

FAIR DEMAND FOR MEAL.

Writing from Plymouth on March 6, Consul Joseph G. Stephens furnishes the following:

Cotton-seed oil is imported into this district in only the smallest quantities, as the demand for it is not large. Cotton-seed cake or meal has a much larger market, and some few years ago was imported direct to Plymouth from New Orleans in large cargo shipments. Owing to the damaged condition of the cargo on arrival by sailing vessels, this trade was abandoned and at present the product is shipped by steamer direct to either Hull or Bristol and thence to Plymouth in lots of 150 to 300 ton shipments per smaller steamer. The cake or meal is used exclusively for the feeding of cattle, and I am informed by local merchants that the demand is a steady and fairly large one. The demand, however, does not grow so rapidly as merchants had anticipated. It is impossible to learn the quantity imported into this district, as some of it arrives by rail and some by water, and those shipments which arrive by rail are not recorded.

American cotton-seed meal and cake comes into competition with linseed meal from India and cotton-seed cake and meal from Bombay and Egypt. The American product is, however, generally preferred, as it is considered more digestible.

SHEFFIELD.

OPPORTUNITY FOR AMERICAN OIL.

Consul Charles N. Daniels, writing from Sheffield, April 5, reports that cotton-seed cake and meal is but little used in that consular district, a comparatively small part of the district being devoted to agriculture. The consul continues:

Milk being the principal product of the farms, preference is given to linseed cake or meal. The present price of linseed cake or meal, 95 per cent pure, is \$39.54 per ton of 2,240 pounds at Sheffield. A little Egyptian cotton-seed cake or meal is used at \$24.94 per ton here. I am unable to learn that cotton-seed linters are used.

Edible cotton-seed oil is used extensively here by the fried fish and chip shops. American cotton-seed oil comes in competition with a like product made in England. This home product is English compressed cotton-seed oil, and is known to the trade as "sweet oil" or

"cooking oil," and is at present (April 5) quoted at \$124.09 per ton of 2,240 pounds.

COTTON OIL AND QUICK LUNCH.

It is in this trade that there appears an opportunity for American oil. The fish and chip shops referred to are the cheap quick-lunch places of the working people of this part of England. It is said that in the city of Sheffield alone there is more than a thousand of these shops, and every town and city in the manufacturing part of England will show them in like proportion. In them a slice of fish and a plate of chips (fried potatoes) are sold at the low price of 1 penny (2 cents) each. The bulk of their trade is done at night, they being the last shops to close, rarely closing before midnight. Formerly animal fat was used in the preparation of this food, but the rigid enforcement of the pure-food act has compelled the use of vegetable oil in place of it.

SUPERIORITY OF THE AMERICAN PRODUCT.

The principal dealer in supplies for these shops a short time ago purchased from an American concern a sample lot of 50 barrels of American oil. After submitting it to severe private tests he supplied his trade with it. The trade with few exceptions pronounced it superior to the English oil they had been using. Asked in what way it excelled, the report was that it was freer from odor and less inclined to "froth up" when heated. Upon his attempting to secure a further supply of this oil he found it had advanced in price to such an extent that he could not compete with the English product. In a long interview with this dealer he advanced the idea that if the American producer could meet the English price until the trade became familiar with the superior quality of the American product there would be no difficulty in holding this market, or the better part of it at least, at an advanced price. He claimed that experiments in his own kitchen had proved its value to him and that a continued use by the trade would demonstrate the fact to them as well.

It is impossible to give any figures as to the quantity of cotton-seed oil used in this district further than to say the dealer before referred to states that if American cotton oil of the quality he has had could be put into the market at a price to compete with the English product his trade alone would require from 100 to 200 barrels a week to supply it.

IRELAND.

BELFAST.

USE OF MEAL, CAKE, AND OIL.

Consul Samuel S. Knabenshue, of Belfast, writes under date of March 14:

Cotton-seed oil, cotton-seed cake, and cotton-seed meal are used in the Belfast consular district to a considerable extent. Linters are not used here. The imports of the cake were 8,117 long tons in 1905 and 6,921 tons in 1906; of meal, 2,222 long tons in 1905 and 96 tons in 1906.

The reason for the great falling off of imports for 1906 as compared with 1905 was the high price last year. The prices in 1906 per ton of 2,240 pounds, free on quay, Belfast, were: For cake, \$34.67 to \$37.72, average about \$36.50; for meal, \$32.85 to \$35.28, average about \$34.07.

Cotton-seed cake and meal come into competition as foodstuffs for live stock with linseed cake and meal, and a small quantity of hemp-seed cake and meal. None of these are used to any extent as fertilizers. The imports of linseed cake for the past two years, in tons of 2,240 pounds, were 13,382 tons in 1905 and 11,732 tons in 1906; linseed meal, 128 tons in 1905 and 83 tons in 1906. The quantities of hemp-seed products were so small that they were not separately named in the official reports. The prices of linseed and cotton-seed cake and meal range on a parity. While it is true Ireland devotes a large area to flax culture, the plant is raised primarily for the fiber. It is pulled before the seed is fully ripened, and the immature seed is not deemed of any value whatever.

CLASSIFICATION OF OILS.

The Belfast Harbor Board, in its official report, classifies oils into "Petroleum and paraffin" and "Other." In the latter are included vegetable and animal oils. Hence it is impossible to obtain any trustworthy data. The edible oil competes with butter, lard, and olive oil, and finds its chief use among bakers. Two grades of cotton-seed oil are imported—the "off grade," for soap makers, and "edible" oil, for bakers' use. The quantity imported for soap-making purposes varies greatly, according to its price relatively to other soap-making oils. It may reach 1,000 tons in a year wherein cotton-seed oil is relatively cheap, and fall to 100 tons when the price is as high as it was in 1906. The quantity imported of "American prime" cotton-seed oil, that used for edible purposes, probably does not exceed from 30 to 40 tons annually. The prices of the two grades, for 1906, per ton of 2,240 pounds, free on quay, Belfast, were, for off-grade oil, \$92.46 to \$111.93, average about \$102.20, and for edible oil, \$114.36 to \$138.70, average about \$126.53. The official returns give the imports and exports by quantities only, and not by values. The above prices were given by importers.

The "off-grade" cotton-seed oil is used entirely by soap makers, and olive oil is its only vegetable-oil competitor. In the soap-making industry the price of the raw material governs, and cotton-seed oil has the lead when it can be sold on Belfast quay at a price that makes it the cheaper material. Ireland is noted for its butter and pig prod-

ucts, exporting both largely, hence the supply of butter and lard is ample. The use of cotton-seed oil depends upon the cost to the consumer. There is no duty on any cotton-seed products in the United Kingdom. There is the same difficulty here as everywhere else in introducing a new food product, such as cottolene; but there is no other prejudice against any cotton-seed products.

CORK.

SMALL DEMAND FOR OIL—INCREASING CONSUMPTION OF COTTON-SEED CAKE.

Consul H. S. Culver, of Cork, reports, March 13, that cotton-seed oil is used in the south of Ireland to such a limited extent that it is impossible to trace it with a view of ascertaining even approximately the aggregate quantity used. Cotton-seed cake, however, has an extensive sale. The consul continues:

Some cotton-seed oil is used by manufacturers of margarine, who import it from London or Liverpool, but not in any considerable quantity. The people generally are strangers to the product and even the leading merchants are not aware of its value or the uses to which it may be put. Like many products from the United States in the south of Ireland, it receives such attention as the dealers in London and Liverpool see fit to bestow upon it, usually being allowed to percolate into the general trade.

It is believed that cotton-seed oil would meet with an ever increasing demand here could its value as a food product be brought to the attention of the people. Other edible and competing greases, such as margarine, butter, and lard, are always high in the market, and a wholesome product like cotton-seed oil, if shown to be cheaper than other oils and greases, no doubt would meet with a ready sale. But one man in Cork keeps the oil on sale, and he dispenses only about four barrels annually. Some little is used for cooking and confectionery purposes, and some as an adulterant in expensive machine oils. It sells at from \$126.52 to \$145.99 per long ton.

COMPETING PRODUCTS.

It is impossible to give the aggregate annual quantity or value of the sales of competing articles. The total imports of all oils into this district for the year 1905 were 5,236 tons, while the exports were 327 tons. The exports of butter were 9,251 tons for the same period; of lard, 570 tons. Olive oil sells here for 1 shilling or 24 cents a pint; butter, from 1 shilling for common dairy to 1 shilling 4 pence, or 32 cents, per pound for creamery; margarine, from 10 to 20 cents per pound; lard, from 16 to 18 cents per pound. The edible oils are not largely used in the south of Ireland. What olive oil is sold is usually bottled by the wholesale merchants in Cork. No other vegetable oils are sold.

Unquestionably the best and quickest way of introducing cotton-seed oil for culinary purposes is through an experienced demonstrator giving exhibitions of cookery in a number of the largest places in

Ireland. This method is successfully practiced here and gives immediate publicity to any new culinary ingredient. The Dublin International Exposition, to be held this year, and numerous minor industrial exhibitions elsewhere offer rare opportunities for such an introduction.

Cotton-seed cake is quite extensively used as a feedstuff and is on sale at many establishments. It sells at \$2.30 per hundredweight in competition with linseed cake at \$2.43 per hundredweight. I am informed by dealers that it is considered a finer milk-producing product than linseed cake, and is therefore used principally for that purpose. Its consumption is increasing, but I am unable to give even approximately the quantity used. No cotton-seed linters are used here.

DUBLIN.

A PROMISING FIELD.

Consul Alfred K. Moe, writing from Dublin, March 16, reports:

There is an extensive field in Ireland for the development of trade in cotton-seed products. Stock raising is carried on to the exclusion of nearly all other large agricultural industries. The Irish department of agriculture has done much to educate the cattle raisers to the necessity for proper and scientific feeding, and during the past few years tests have been carried out in various parts of the country with such success that cattle feeding has assumed a new aspect. So far as I am able to determine cotton-seed cake and meal have only a slight footing here; other meals, such as linseed, still predominate the market. There should be no difficulty in gaining complete control of the Irish market if the proper means are pursued to establish cotton-seed products here. The necessity for direct importation is obvious when the high local and interisland freight rates are known.

IMPORTS AND EXPORTS.

The imports of cotton-seed oil and competing products and of cotton-seed cake and meal and competing products into Ireland in 1904 are given in the official reports as follows:

COTTON-SEED PRODUCTS AND COMPETING PRODUCTS IMPORTED INTO IRELAND, 1904.

Article.	Dublin.	Belfast.	Other ports.	Total.	
				Quantity.	Value.
Oils and fats:	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Cwt.</i>	<i>Dollars.</i>
Cotton-seed.....	3,140	1,020	129	4,289	32,090
Linseed.....	2,940	.....	1,320	4,260	18,638
Lard.....	15,709	55,620	4,523	75,852	922,834
Stearin.....	3,160	.....	170	3,330	30,786
Tallow.....	8,561	15,241	5,987	29,779	201,940
Grease.....	16,896	8,240	505	25,641	49,911
Butter.....	28,606	25,960	692	55,258	1,103,301
Margarine.....	21,806	11,940	2,864	36,610	463,223
Cake and meal:					
Cotton-seed cake.....	62,020	195,640	24,800	282,460	86,450
Cotton-seed meal.....	15,712	19,420	1,797	36,929	53,916
Linseed cake.....	165,680	276,100	31,000	472,880	728,680
Linseed meal.....	2,717	16,720	10,105	29,542	86,259
Cattle meal.....	125,860	.....	29,537	155,397	184,838
Other meal.....	143,414	40,788	222,952	407,154	495,851

Almost all the linseed cake came from the United States and Russia, and almost all the cotton-seed oil came from the United States. Margarine direct from Rotterdam to the value of \$76,029 was imported into Belfast and to the value of \$28,187 into Dublin.

The imports of manures and variety are given herewith: Basic slag, 181,961 hundredweight, value, \$88,551; bone manure, 3,431 tons, value, \$83,485; guano, 1,670 tons, value, \$18,762; kainit, 3,456 tons, value, \$42,046; nitrate of soda, 6,825 tons, value, \$348,748; sulphate of ammonia, 678 tons, value, \$39,594; mineral phosphate, raw, 60,981 tons, value, \$565,867; superphosphate, 46,818 hundredweight, value, \$569,599; artificial manures, 68,107 tons, value, \$2,058,427.

The exports of artificial manures amounted to 22,223 tons in 1904, and the value, estimated, is \$634,689. I am unable to find that cotton-seed products are used in the composition of any manures in Ireland. In this respect alone there should be an immense market in this country for cotton-seed products, and it is strongly urged that special efforts be made to establish a great depot in Ireland, preferably in Dublin, as a distributing center.

GOVERNMENT REGULATIONS.

The fertilizers and feeding stuffs act (1906) regulates the sale of agricultural fertilizers and feeding stuffs. It provides as follows:

SECTION 1. Every person who sells for use as a fertilizer of the soil any article which has been subjected to any artificial process in the United Kingdom, or which has been imported from abroad, shall give to the purchaser an invoice stating the name of the article and what are the respective percentages (if any) of nitrogen, soluble phosphates, insoluble phosphates, and potash contained in the article, and the invoice shall have the effect as a warranty by the seller that the actual percentages do not differ from those stated in the invoice beyond the prescribed limits of error.

SECTION 2. Every person who sells for use as food for cattle or poultry any article which has been artificially prepared shall give to the purchaser an invoice stating the name of the article, and whether it has been prepared from one substance or seed or from more than one substance or seed, and in the case of any article artificially prepared otherwise than by being mixed, broken, ground, or chopped, what are the respective percentages (if any) of oil and albuminoids contained in the article, and the invoice shall have effect as a warranty by the seller as to the facts so stated, except that as respects percentages the invoice shall have effect only that the actual percentages do not differ from those stated in the invoice beyond the prescribed limits of error.

Inspectors and analysts are appointed to watch over and examine such articles. Following is a copy of the third schedule of the regulations which govern the limits of error in feeding stuffs:

In this schedule the percentage of albuminoids is to be taken as the percentage of nitrogen multiplied by 6.25.

FEEDING STUFFS.

Description of feeding stuff.	Limits of error.
Decorticated cotton cake or meal, undecorticated cotton cake or meal, earth nut or ground nut cake or meal, palm kernel or palm nut cake or meal, coconut cake or meal, Niger seed cake or meal, sesame seed cake or meal, sunflower seed cake or meal, hemp seed cake or meal, kurdie or sunflower cake or meal, and compound cakes and meal.	One-tenth of the percentage of oil and one-tenth of the percentage of albuminoids stated in invoice.
Linseed, rape, maize products, cake, and meal	One-eighth of the percentage of oil and one-eighth of the percentage of albuminoids stated in invoice.
Dried grains, malt culms, rice meal, wheat germ, and all other feeding stuffs, as defined in regulation 3, not otherwise specified in this schedule.	One-fifth of the percentage of oil and one-fifth of the percentage of albuminoids stated in invoice.

The statistics in this trade, so far as can be gleaned from the annual official report of the Dublin port and docks board, show the following figures:

Article.	Imports.			Exports.		
	1903.	1904.	1905.	1903.	1904.	1905.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Cotton-seed cake.....	2,428	2,876	3,112	46	57	54
Cotton-seed meal.....	136	267	1,366	.....	.....	.....
Linseed cake.....	8,462	8,482	8,475	70	140	124
Linseed meal.....	663	146	148	1	03	02
Oil-s.....	27,824	29,548	23,379	5,795	5,366	773
Tallow.....	769	442	462	34	300	398
Butter.....	1,134	1,432	1,383	9,270	8,423	7,779
Margarine.....	957	1,093	1,283	1,404	1,207	769

* Hundredweight.

* Oils are not separately classified, with the exception of petroleum and paraffin, the latter being omitted above.

It may also be noticed that the figures for the importation of cotton-seed cake differ in the reports of the department of agriculture published by the Irish government and that of the Dublin port and docks board. As there is no way of arriving at the exact figures, I give both.

BUTTER, EDIBLE OILS, AND PRICES.

It can not be actually demonstrated how far other oils and fats come into competition with cotton seed in this district because of the absence of any statistics or reliable trade information on the subject. Neither butter nor edible oils are used to the extent that they are in the United States; but, on the other hand, imitation butter, such as margarine, is used more commonly here than at home, especially for cooking purposes. Butter prices in Dublin (March 13, 1907) are: Danish, \$27.24 to \$27.97 per hundredweight; Irish, about the same prices; farmers', \$23.35 to \$24.08 per hundredweight. Olive oil sells at about \$1.75 per gallon, retail; lard, per 112 pounds, pails, \$11.79 to \$12.03; firkins, \$11.55 to \$11.79. Tallow brings about \$8.75 per hundredweight, and margarine about \$12.65 per hundredweight; cotton-seed cake sells at \$39 per ton. If the wholesale purchase price comes to about \$25 per ton delivered in Dublin, it may at once be noticed that a gross profit of \$15 per ton is a handsome return to the dealer, as well as a hardship on the purchaser, and must tend to keep down the sales. This demonstrates the value of an American wholesale and retail depot in Ireland, where cotton-seed products could be sold at a fair profit and at the same time greatly augment the market for such goods.

SCOTLAND.

DUNDEE.

CAKE FROM BOMBAY AND EGYPT.

Consul John C. Higgins, of Dundee, reports, on March 11, 1907, that the trade in cotton-seed products in Dundee and the surrounding country is so small as to call for little more than passing remark. He continues:

The principal form in which cotton-seed products are dealt in here is cake for cattle-feeding purposes, of which about 300 to 400 tons are consumed every week. This cake, which is almost entirely of the undecorticated sort, is made either from Bombay seed or Egyptian seed, the former costing from \$20.67 to \$21.89 per ton, the latter from \$24.33 to \$26.76 per ton ex quay Dundee. American cake is all decorticated, and very little is used here, not more than 3,000 tons per annum, including meal, which is principally used as one of the ingredients in compounding cake. The consumption is fairly regular, any change there may be leaning toward an increase rather than a decrease.

Cotton-seed oil is neither imported directly from abroad nor crushed in this city. No statistics are available to show the quantity consumed in this district, but it is understood that the whole amount would not form an appreciable factor in the trade. There are no large factories here, such as exist in London, Bristol, Liverpool, Hull, Leith, and Glasgow for the manufacture of margarine and soap, two industries in which large quantities of cotton-seed oil are used. Its use here is limited to the cooking operations of bakers and hotel-keepers, but the quantity consumed in this way is not of any practical account. Dundee also uses a considerable amount of "lardine," of which cotton-seed oil and stearin are the principal ingredients. It is imported from Hamburg, where there are large factories for its production, and sells for \$2.43 per hundredweight of 112 pounds less than pure lard.

Linters are not used in this district.

DUNFERMLINE.

PRODUCTS FROM BOMBAY AND EGYPT.

Consul J. N. McCunn writes that there are no statistics obtainable in the Dunfermline district of the quantity or value of cotton-seed products sold. He continues:

The British Oil and Cake Mills (Limited), with head offices in London, have a branch mill at Burntisland in this district. The other Scotch branches are at Leith and Glasgow. Each branch receives raw material from Bombay and Egypt. Occasionally supplies are forwarded from headquarters, but practically the whole of the

cotton seed required by each branch is shipped direct. The Burntisland mill will crush about 300 tons per week, and there is a small place at Largo where about 100 tons per week may be crushed. The Kirkcaldy Oil and Cake Mills, at Kirkcaldy, deal only with linseed, as there is a good local demand for linseed oil by the linoleum manufacturers who do not use cotton-seed oil.

Cotton seed when crushed produces about one-fifth oil and the balance is made into cake. The husk is not removed from the seed before crushing, and therefore enters largely into the cake, which is termed "undecorticated cake." Cotton-seed linters are not used. Cotton oil is used chiefly for soap making and the cake for cattle feeding. A small proportion of the finest oil is used for edible purposes, and comes into competition with olive, peanut, and other vegetable oils. It also comes into competition with tallow and lard and to some extent with linseed oil.

Lard is now quoted as follows: Pure, 28-pound pails, \$12.65; mixed (lard and cotton oil), 28-pound pails, \$10.70. It is very difficult to get pure olive oil, and I am informed that large quantities of cotton oil are shipped to the Mediterranean and mixed with olive oil. Peanut oil costs about \$194.66 per ton, and is largely used for the finer classes of margarine. Consequently, the finer cotton-seed oil can be made the more it will displace peanut oil. Cotton cake competes with linseed and other compound feeding cake, and is cheaper than the linseed cake.

EDINBURGH.

FREE USE OF ADULTERANTS IN CAKE.

Consul Rufus Fleming, of Edinburgh, March 28 writes that the commercial importance of cotton-seed products has been steadily increasing for many years. As feed for stock, the cake won favor long ago in competition with linseed cake, rice cake, and similar feed-stuffs, and later the merits of the oil as an article of food, and especially as a material in the manufacture of edible and other commodities, were recognized. The consul continues:

The white oil (the best grade is so designated here) has been adopted for culinary purposes to a limited extent only. Bakers first experimented with it by smearing the loaves of bread with the oil before putting them into the oven to prevent adhesion. This proved satisfactory, and as baking is an important trade in Scotland (practically no baking is done in private houses) this use of the oil consumes large quantities. In no other way has the white oil or cottolene (little of the latter is imported or made here) been used by the bakers as a substitute for lard, lard compound, or margarine, each of which, however, contains, as a rule, a percentage of cotton-seed oil. In biscuit manufacture, an important industry in Edinburgh, this oil is not used. Margarine has largely taken the place of lard and lard compound in these establishments, and in buying margarine the biscuit manufacturers require a guaranty that it contains no cotton-seed

oil. Asked why he objected to it, the manager of a leading concern informed me it had been his experience that after a time the oil oxidized in biscuits. But for this fault, he said, his firm would use cotton-seed oil only, dispensing with margarine and lard. He expressed the opinion that for baking and cooking, where the food is to be consumed at once or within a few days, the oil should find general favor, as the best quality was perfectly suited to these purposes. But until the bakers use it more freely not much of the oil will go into private kitchens. Little olive oil or salad oil enters into cooking, the cooks preferring, as a rule, lard or lard compound, or one of the forms of imitation butter. In domestic ways and means, as in other matters, Scottish conservatism is rather difficult to overcome, but when once it yields, and when cooks become familiar with the substitute for lard, the lower price of the white oil will secure for it a very large sale. Such, at least, is the opinion of local manufacturers, dealers, and importers. The current wholesale price of the oil is about 6 cents per pound, and of lard about 10 cents per pound.

EXPANDING MARKET FOR COTTON OIL.

The principal use of edible oil in this district at present is in the manufacture of margarine. For butter and margarine Leith is the chief importing and distributing point in Scotland, and that city also produces a great quantity of the latter. Edible tallow, the main ingredient, is from \$10.94 to \$11.42 per hundredweight (112 pounds). The only vegetable oil used in the production of margarine here is cotton-seed oil, the price ranging from \$6.07 to \$6.67 per hundredweight. It has long been the practice to largely mix this oil with the tallow, and the tendency is to increase the proportion of the oil in the combination. Margarine varies greatly in price, according to quality, the quotations ranging from \$7.78 to \$19.46 per hundredweight. This industry offers an expanding market for cotton-seed oil, inasmuch as margarine will always be in strong demand, in competition with butter, owing to the comparatively low cost. At present the quotations for butter are \$21.90 to \$26.76 per hundredweight, according to quality. Little butter is made in this part of Scotland. Most of the supply for south Scotland and north England comes to the port of Leith from the Continent. In the local butter trade the opinion is freely offered that for some years cotton-seed oil has been one of the important materials in the making of continental butter of various grades. No one finds fault with the butter on that account, but not a few dealers contend that prices are much higher than the cost of production warrants; that there is a wide margin between cotton-seed oil at 5 to 6 cents per pound and butter at 20 cents per pound (wholesale).

The consumption of olive oil here is inconsiderable. It is not an item of sufficient commercial importance to be included in the official statistics of trade. The commercial olive oil, so far as it comes to this district for any purposes, is understood to be a mixture of olive and cotton-seed oils. The manager of a local cotton-seed crushing mill tells me that much of the edible cotton oil exported from Leith goes into olive oil on the Continent.

NONEDIBLE COTTON-SEED OIL.

Large quantities of the lower grades of oil are sold to soap makers. These grades, for which the prices vary from \$5.59 to \$6.07 per hundredweight, are mixed with ordinary tallow (quoted at \$8.51 to \$9.24 per hundredweight) and other materials of soap manufacture. The oil is said to be well suited to this purpose. The fact that soap factories are requiring more and more of it and using little, if any, other vegetable oil indicates that the demand is not only permanent, but likely to increase indefinitely. For one of the uses of olive oil in manufacture the cotton-seed product has not been found satisfactory, I am informed. In making certain fine grades of woolen goods (in England, not in Scotland) the yarn is treated with olive oil. Experiments with cotton-seed oil did not, it is said, bring the same results. To what extent cotton-seed oil is mixed with the olive oil used investigation has not disclosed. As the latter oil is \$10.70 per hundredweight, the process of saturating yarn with it would be very expensive unless a cheaper ingredient were added.

LINTERS IN PAPER MAKING.

Cotton-seed linters are neither imported nor made here. Most of the seed worked by local mills is not decorticated. In some parts of England linters are sold to paper mills. There are in this district about twenty paper mills, large and small, and if this material can compete with linen rags, averaging \$38 per ton, cotton rags at \$30, or Spanish esparto at \$21.30, or if it has any special merits as a paper-making material, it should readily find a market in Edinburgh and vicinity.

DEMAND FOR FEEDSTUFFS.

In this country, where maize can not be grown and the dependence for stock food is mainly upon root crops, especially turnips, for general feeding purposes during the greater part of the year, the demand for feedstuffs has made this trade an important one. Both the importation and the production of feedstuffs are large, many firms being engaged in one branch of the business or the other. The trade embraces a variety of articles, some of which are both imported into and produced in the district. Market values change from week to week. The current quotations of these commodities in wholesale quantities are as follows:

PRICES OF FEEDSTUFFS IN SCOTLAND.

Articles.	Price per ton.	Articles.	Price per ton.
Cotton seed:	Dollars.	Rice meal	Dollars.
Cake, American	36.50 to 39.65	bran, medium	22.88
Egyptian, homestead	34.98	mill parings	25.54
Bombay	30.67	sharps	27.87
Decorticated	34.66	Barley dust, medium	24.93
Meal, American	29.20 to 35.62	Decorticated	24.33
Decorticated	34.06	Pease, feeding	34.23
Linsed:		white shells	29.20
Cake, American	34.06 to 38.93	brock	29.20
Archangel	37.10	Locust beans, Cyprus	23.96
Russian	35.88	ribbed Cyprus	24.93
Homestead	37.71	Malt cummin	20.67
Chaff, white	17.64	Saccharine meal	27.87
Thorin (85 per cent linsed cake)	37.00	Dried grains, distillery	28.71
Special feeding cake	28.68	brewery	21.28
Rape-seed cake	29.67	Treacle (feeding molasses)	30.96
Bean cake, Japanese	34.06		

Two large mills in the district produce cotton-seed oil and cake, and several mills make feedstuffs or adulterants for feedstuffs. The ordinary cake is sold by the mills to farmers or feeders at \$21.77, and to dealers at about \$20.50 per ton. The mill price for linseed cake to farmers or feeders is \$37 per ton. The cotton seed used comes principally from Bombay, varying in price from \$26.76 to \$31.60 per ton. Brazilian seed is quoted at \$29.20 to \$30.40, and Egyptian at \$36.98.

ADULTERANTS IN FEEDSTUFFS.

The competition indicated by the list of materials and prices above given would be sufficiently keen, even if the factor of adulteration were absent. Unfortunately this has become an important feature of the trade. He is a wise farmer or stock feeder who knows what he gets when buying feedstuffs unless a good price is paid and a guaranty of fair quality exacted. Not only is flour-mill, distillery, and brewery "offal" of various kinds mixed with feedstuffs, but several preparations having no nutritive value are freely employed in the trade to give bulk and weight, with not always a corresponding reduction in the price of the goods. The profits of each manufacturer or dealer are derived to a great extent from a mixture or mixtures of his own compounding, to which he gives special names and into which the adulterants are thrown with lavish hand. Treacle is the basis of some of these "blends." Half a dozen other feedstuffs, including cotton-seed meal, linseed meal, rice meal, etc., may go into the mixture, to be followed by a liberal quantity of nonnutritive material. Prominent among these adulterants are "oat husks," valued at \$8.50 to \$9.73 per ton; oat-husk meal, sold to the trade at \$12.35 to \$14.60 per ton; coffee-husk meal, sold at \$11.16 to \$12.35 per ton, and scree dust—i. e., stone dust—which sells at \$9.73 to \$10.94 per ton. Oat husks are not only used here very largely, but are exported to the Continent (under other names) for the same purpose. Coffee husks are imported to this market from Hamburg under other names.

It is doubtful if the adulteration of feedstuffs has been carried to a greater length anywhere else than by local manufacturers. This element, together with the number of the articles bidding for favor, can not but have an effect upon the sale of American and other foreign cotton-seed cake and meal.

CONSUMPTION OF COTTON-SEED PRODUCTS.

It is impossible to give the quantities of cotton-seed oil or of commodities with which it competes or into which it enters or of cotton-seed cake, etc., consumed in this district. There are no statistics of production in this country. It can be said, however, that the seed-crushing mills here are largely supplying the market. The rapid growth of this industry is clearly shown by the following statistics of the imports of cotton-seed into Leith:

IMPORTS OF COTTON SEED INTO LEITH, 1901-1906.

Year.	Quantity.		Value.
	Tons.	Dollars.	
1901	4,382	155,231	
1902	3,033	78,711	
1903	14,818	333,358	
1904	19,795	461,982	
1905	24,717	590,195	
1906	28,563	728,968	

Imports of linseed declined in value from \$335,745 in 1901 to \$310,142 in 1906. The imports of cotton-seed oil and cake into this district during the last two years were as follows:

IMPORTS OF COTTON OIL AND CAKE INTO LEITH, 1905 AND 1906.

Description.	From the United States.				From all countries.			
	1905.		1906.		1905.		1906.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
Cotton-seed oil, not refined.	Tons. 20	Dollars. 2,024	Tons. 35	Dollars. 2,853	Tons. 9	Dollars. 779	Tons. 44	Dollars. 5,933
Cotton-seed oil, refined.	2,950	90,862	1,861	63,336	7,850	196,271	3,820	113,034
Cotton-seed cake.								
Total.	2,970	92,886	1,876	65,562	7,846	207,694	3,873	119,746

The rice meal imported (mostly from Rangoon) in 1905 amounted in value to \$78,180, and in 1906 to \$111,613. Imports of locust beans last year amounted to \$126,500. The official figures of the total imports of oil-seed cake of various kinds in 1906 are not available, but I am informed that the imports for 1905 were not exceeded. In that year the value was \$540,580. Linseed cake was by far the largest item.

The imports of greases, etc., for 1905 (the latest statistics obtainable) were:

Articles.	Quantity.	Value.	Articles.	Quantity.	Value.
Butter	Cwt. (112 lbs.) 415,205	Dollars. 10,972,255	Lard	Cwt. (112 lbs.) 18,859	Dollars. 161,539
Margarine	168,895	2,062,938	Tallow	16,872	110,844

CHANCE FOR AMERICAN OIL AND CAKE.

There can be little doubt that the demand for cotton-seed oil as a material of manufacture will grow. It is also probable that the market for the cheaper cake will continue to expand. Scottish stock-feeders were the first in the United Kingdom to use undecorticated cake, and it has been chiefly through the production of this cake that the local seed-crushing mills have become firmly established. Plainly,

present conditions make this market a difficult one for outside competitors. It is not easy to conceive how competition in the two separate branches of the trade could be sharper than it is to-day in east Scotland. In feedstuffs especially, as I have shown, the great effort is to gain profits by mixing the good and the worthless, which tends to restrict the sales and keep down market values of high-grade articles. Whether American producers can increase their sales here seems to be altogether a question of prices.

GLASGOW.

MARKET FOR OIL AND CAKE.

Consul R. W. Austin, of Glasgow, reports under date of March 5:

From 6 million to 8 million pounds of cotton-seed oil in barrels of from 400 to 410 pounds each and about 2,240,000 pounds of cotton-seed cake and meal, the cake in bags of 280 pounds each and the meal in bags of 100 pounds each, are imported into Glasgow annually.

During a normal year the price of cotton-seed oil is about \$90 per ton, but it fluctuates greatly and at the present time is \$150.86 per ton. The price of American cotton-seed cake and meal is \$31.62 to \$34.06 per ton. It is estimated by the leading firms handling these commodities that the quantity imported of each per annum may also be taken as the quantity sold, which shows the value of cotton-seed oil sold per annum to be about \$300,000 and of cotton-seed cake and meal \$32,500 per annum.

Cotton-seed cake and meal are used for cattle feeding and cotton-seed oil for culinary purposes and making margarine, while a cheap quality is used for soap making.

COMPETITIVE OILS.

The only manufacture with which American cotton-seed oil comes into competition to an appreciable extent is cotton-seed oil crushed in Great Britain from Egyptian seed for edible purposes, price \$143 per ton, and from Bombay seed, chiefly for soap-making purposes, price \$131 per ton. The annual quantity of the sales of these is not obtainable. In a small degree it competes for culinary uses with edible olive oil, price \$292 per ton; peanut oil, \$180 to \$200 per ton; lard, \$238 per ton, and edible tallow, \$190 to \$220 per ton.

The importations of cotton-seed oil have decreased recently, owing to American exporters having bought back large quantities that had been sold to firms here but had not been shipped, the repurchase being made at a substantial increase on the first price to meet the advance of market value in the interval between the transactions, which were quite satisfactory financially to the intending importers here. Olive oil is used very little here for edible purposes on account of its high price. Cotton-seed oil, put up in bottles labeled "Salad oil," being much cheaper, is used in preference for culinary purposes, but the trade in salad oils of any kind is not large, probably 50 to 100 barrels per annum. There is no discrimination against cotton-seed oil in its honest form, labeled as such or as "Salad oil," but the pure-food

laws prohibit the mixing of cotton-seed oil with olive oil and labeling it "Olive oil."

About 450,000 pounds of cottolene per year is brought into this district and disposed of to be used by bakers as a margarine and butter substitute for "shortening" cakes, but as it gives general satisfaction where now used this figure might be increased. The present price of cottolene is \$223 per ton, but it is very variable and has been as low as \$150, its market value being regulated, of course, by that of cotton-seed oil.

Margarine is sold in several qualities at prices ranging from \$195 to \$340 per ton—medium qualities being most in demand—and butter at \$525 per ton, but as they come here by land and water from so many different sources and are handled by so many firms I have been unable to ascertain the amount used, and none of the dealers feels justified in estimating even approximately.

An agency has been appointed in Glasgow to put on the market in the district an American product named "Veltex," which is claimed to possess qualities similar to cottolene. A representative of the agency informed me that they have not yet had their exploiting machinery set properly in motion, but that having in view the fact that a ready market had been found for "Veltex" in England he had good reason to expect success for it here. The present price of "Veltex" is about \$194 per ton, but during the past year it varied from \$136 up.

CAKE AND MEAL.

Cotton-seed cake or meal are not used here as ingredients of commercial fertilizers. As feedstuffs they compete with linseed cake and undecorticated cotton-seed cake, which is made here from Bombay and Egyptian seed. Home-made linseed cake is sold at \$38.93 per ton, and American is usually \$2.50 to \$3.50 per ton less. The price of undecorticated cotton-seed cake mentioned is \$22 to \$25 per ton. I have been informed by the principal importer of American cotton-seed cake and meal into this district that buyers of decorticated cotton-seed cake are complaining of its extreme hardness (some of it being unfit for consumption by cattle) and are reducing its use. In regard to cotton-seed meal, he advocated very strongly the adoption of a proper standard basis of percentage of albuminoids, etc., the absence of which, he stated, materially affects its importation.

There is no import duty on any of the articles mentioned in this report.

WALES.

CARDIFF.

MARKET FOR COTTON-SEED PRODUCTS.

Consul Daniel W. Williams reports from Cardiff, Wales, February 28, that there are practically no cotton-seed products imported direct overseas, hence no port statistics are available. He writes:

Small quantities of cotton-seed oil and cotton-seed cake are used in Wales, but no cotton-seed meal has been reported. The supplies are

imported via Liverpool or Bristol or manufactured at Bristol, Gloucester, or Hull. Cotton-seed oil comes in four or five forms, the greater part in liquid form in barrels. One chemist reported that a small quantity comes from Italy, bottled as a salad oil. Another dealer, handling paints, reported that some cheap oils sold as linseed oil are, in fact, made chiefly of cotton-seed oil. Some wholesalers handle a Chicago lard compound which consists in part of cotton-seed oil, and occasionally there is a small quantity of canned cottolene on the market. Only one form of cotton-seed cake is sold here.

Cotton-seed oil is used to a small extent as a lubricant and to a greater extent as a paint mixer, but chiefly for cooking purposes. Cotton-seed cake is used chiefly as a cattle food, but in recent years sheep owners have been feeding it during the lambing season.

The price of cotton-seed oil in barrels has advanced in the past three years from 29 cents a gallon on January 1, 1905, to 40 cents in 1906, and to 55 cents in 1907. The lard compound wholesales at \$10.02 per hundredweight of 112 pounds. The cotton-seed cake (8 per cent oil) retails for \$2.13 per hundredweight. No cotton-seed linters have been reported.

ANIMAL OILS PREFERRED.

Animal oils, such as cheese, butter, blends, margarine, lard, and tallow, are the principal competitors of cotton-seed oil in Wales, and they monopolize about 98 per cent of the demand, leaving about $\frac{1}{4}$ per cent to cotton-seed oil and $\frac{1}{4}$ per cent to other edible vegetable oils. The use of cotton-seed oil for food is practically confined to the "fish bars," which are peculiar to this country, where it is used on account of its comparative cheapness in frying fish. A small fraction is used for domestic purposes by Hebrews and in lard compound bought by the poorer classes, while another fraction is palmed on the poorer people on the Continent as a salad oil. Prices of edible animal oils and blends range as follows: Cheese, 13 to 18 cents per pound; butter, 20 to 30 cents; margarine, 8 to 20 cents; lard, 11 to 14 cents; tallow, 12 cents.

The use of cotton-seed oil as a lubricant and in the manufacture of paints and soaps is limited, and it is really used thus either as a cheaper or an adulterant.

The preference for animal edible oils is a marked characteristic of the Welsh, for they even have a word in their language to designate animal-food products. This word is "enllyn," and no Welsh meal is complete without some form of it, especially cheese and butter or other milk products. The consumption is so great that, in addition to the production, the annual imports per capita exceed 13.2 pounds of cheese, 6.8 pounds of butter and margarine, and 4.9 pounds of lard. The Welsh do not like any form of vegetable oils, and the consumption of cotton-seed oil is only an expedient when poverty presses.

DECREASE IN CONSUMPTION.

There has been a decrease in the consumption in the past ten years of all cotton-seed products prepared in America. Lard compound alone retains its hold on the market, one firm handling 20-ton lots at a time; but there is reason for suspecting that it succeeds in doing

so because it passes for lard. Cottolene has practically disappeared. Barreled oil is losing ground, both on account of its advancing price and the greater prosperity of the people. Cotton-seed cake is losing ground because, as one wholesaler reports, "American deoerated cake has practically died out, owing to the cake becoming harder and harder in manufacture" and British brands now monopolize the market. It is probable that the dumping of stale or inferior brands has contributed to this result.

Wales reported 738,789 head of cattle in 1905, and 1,989,176 acres of pasture land. In this favorable climate grass grows green ten months in the year, and there is a demand for universal stock foods for only two or three months. Even in those months the universal practice of feeding roots, such as turnips, swedes, and mangolds, shuts out much other food. The principal competitor of cotton-seed cake is linseed cake, and others are corn oil, and the various brands of American stock food. The linseed-cake quotations are as follows: Eight per cent oil, \$2.49 per hundredweight; 12 per cent oil, \$2.68; 16 per cent oil, \$3.16.

GROWING PREFERENCE FOR BRITISH GOODS.

A casual examination of shop windows reveals the fact that the British brand on everything is made conspicuous, and many placards with "All of British manufacture," and similar legends abound. As a result there is an increasing amount of British flour, furniture, shoes, tobacco, tinned meat, dry goods, etc., made from the American product imported in a raw form, such as grain, lumber, leather, leaf tobacco, etc.

Cotton-seed mill men must expect greater competition from British mills than ever before, for the growing patriotic sentiment for British-made goods is equivalent to a considerable tariff differential. To retain or win a place in the markets of the British Isles the American manufactured product must either undersell the British product of the same quality or be delivered more promptly, or at a lower freight. A great handicap on American articles is the lack of central storehouses.

Cardiff's docks are admirably equipped as a distributing center for all Wales, and the English midlands as far north as Birmingham and Sheffield. The Lord Line steamers run from Baltimore to Cardiff.

NETHERLANDS.

ROTTERDAM.

LARGE USE OF OIL—USE OF SEED AND MEAL LIMITED.

Consul-General Soren Listoe, writing from Rotterdam April 16, reports:

Cotton-seed oil is imported and used in the Netherlands in great quantities, but cotton-seed meal is only used to a limited extent, as the farmers, except in the Province of Zealand, where the bulk of the meal imported into Holland is consumed, seem to be afraid that

cotton-seed meal would be detrimental to the health of cattle. A prominent dealer in the article informs me that there will probably never be any general demand in Holland for cotton-seed meal as food for cattle until the farmers shall be convinced of its value and induced to believe that this kind of meal is healthy, nourishing, and fattening. This knowledge might be conveyed to them by lecturers sent from the United States, as has been done in Denmark in State agricultural institutions.

In the opinion of the Holland American Cotton Oil Company, of Rotterdam, an American concern, there is more cotton-seed oil imported into this city than into any other port in Europe. The average receipts here for the past five years have been about 200,000 barrels per year, or 10,000,000 gallons, which represent a value of about \$4,020,000.

It is estimated that about 75 to 80 per cent of the cotton oil imported each season at this port is of the edible quality, and that it is used principally in the manufacture of margarine, compound lard, and for cooking purposes. The oil which is not fit for edible purposes is used by the soap manufacturers.

It is difficult to make a definite statement as to what percentage of cotton oil is used by the churners in the manufacture of margarine, the quantity varying considerably and depending principally upon climatic conditions as well as the cost price of other raw materials. In cold weather a margarine manufacturer will use more cotton-seed oil than in warm weather. I have been informed that margarine can contain 45 per cent cotton-seed oil as a maximum, while at other times only 5 per cent is used. In the manufacture of compound lard it is estimated that a manufacturer can safely use 80 per cent of cotton-seed oil throughout the entire year. As a cooking oil it is used in its original state.

MEAL, CAKE, AND LINTERS.

The leading importers claim that the average quantity of cotton-seed meal annually imported during the past five years is about 30,000 tons, representing in value \$904,500.

There is practically no cotton-seed cake imported here.

Linters are not, as far as I have been able to ascertain, used in this country. A considerable amount is landed at Rotterdam destined for Germany, where it is said to be used for the manufacture of gun cotton, blankets, padding, etc. Dealers in cotton-seed products here claim that the quality of the lint in bales is very uneven, and in order to avoid dissatisfaction among customers the dealers make no sales, but advise people who use linters to purchase from American mills, free on board, or at seaports.

Cotton-seed oil of edible quality comes in competition with peanut, sesame, high-grade English cotton oil, rape-seed, and other oils or greases.

For technical purposes cotton-seed oil, such as is used by the soap makers, comes in competition with English cotton oil, linseed, palm-kernel, corn, and low-grade, peanut and sesame oils. American cotton-seed oil is known to give the soap manufacturer the best results, inasmuch as it produces better fatty acids. Many of the continental soap manufacturers have facilities for separating the

glycerin and fatty acids of cotton oil. They will always pay a premium for it, but if the difference in price is too large the consumption is reduced accordingly.

Cotton-seed meal and cake comes in competition principally with linseed cake and meal. About 175,000 tons of linseed cake are imported here yearly, representing an average value for the last five years of about \$5,276,250 per year. There are many mills in Holland and Germany for crushing flaxseed, which is imported from the United States, Argentina, and Russia. Linseed cake and meal produced by these mills contain considerably more oil and fat than the meal and cake shipped by America.

The import duty on cotton-seed oil and similar oils is 22 cents per 220 pounds.

IMPORTS FOR TWO YEARS.

Of the cotton-seed products imported into Rotterdam it is difficult to state accurately how much of each is used in the Netherlands. Rotterdam is practically a gateway to the Rhine district, southern Germany, and Switzerland. The Rhine district is a very large manufacturing center and thickly populated, so that a great deal of the cotton-seed products arriving here moves through to Germany.

Imports of cotton-seed and competing products into the Netherlands and the share therein from the United States for the last two calendar years were as follows:

IMPORTS INTO THE NETHERLANDS OF COTTON-SEED AND COMPETING PRODUCTS, 1905 AND 1906.

Description.	Total Imports.		Imports from United States.	
	1905.	1906.	1905.	1906.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Cotton-seed cake and meal	75,382,000	63,795,400	69,170,200	56,896,400
Linseed cake and meal	408,207,800	475,472,800	200,670,800	291,412,000
Oil.				
Cotton-seed	36,614,600	41,635,000	33,616,000	39,377,800
Oleo	114,241,600	122,394,800	106,146,600	114,748,400
Olive	586,200	628,400	.....	.....
Peanut	1,086,800	891,000	.....	.....
Sesame, etc.	451,200	894,000	.....	.....
Peanuts	58,654,200	69,331,800	.....	.....

AMSTERDAM.

INCREASED IMPORTS FOR CONSUMPTION.

Consul Frank D. Hill, of Amsterdam, reports, April 6, that the imports of margarine for consumption show a steady increase, those from the United States having advanced from 43,784 tons in 1904 to 51,157 tons in 1906, the total for the latter year from all countries aggregating 55,634 tons. The consul continues:

Imports of cotton-seed oil for consumption show corresponding increase, being in 1906 17,899 tons from the United States in an aggregate importation of 18,925 tons. During the same period imports of peanut oil show a decrease. Imports of olive oil have not increased, being in 1904, 215 tons; 1905, 271 tons; 1906, 227 tons.

Beech and poppy oil remain stationary, and the same is true of rape oil.

In 1904 6,555 acres were planted in the Netherlands with rape seed, the average yield being 76.84 bushels per hectare (2.47 acres). In the same year 39,095 acres were planted with linseed, the average yield being 1,408 pounds per hectare. Linseed is cultivated here both for fiber and seed. Dutch linseed is cultivated in the northern provinces of Friesland and Groningen for seed and in the southern province of Zeeland for the fiber. It contains, however, very little oil, and is exported for the most part to Great Britain, where it is used in making varnish (lacquer) for leather, etc. The exportations for 1905 aggregated 17,839,850 pounds, valued at \$749,760.

Cotton-seed oil is largely used in this country. Imports are increasing every year, and are almost exclusively from the United States. Imports of cotton-seed cake and meal are decreasing, and at present do not amount to much on account of reported bad results. It is said that cows have died here from eating cotton-seed cake and meal, and for this reason many farmers will not longer buy this article.

The best qualities of cotton-seed oil are used for the most part in margarine factories, those used being "choice butter oil," "first prime summer yellow," and "second prime summer yellow." For mixing with peanut oil as edible oil "prime winter yellow" quality is used, while "bleachable white oil" is used to mix with compound lard. Cotton-seed oil used in margarine factories comes in competition with peanut oil, while the "off yellow" competes with linseed oil.

The price of cotton-seed cake is a little less than that of meal. English-made cotton-seed cake is at present offered at \$26.23 per ton c. i. f. Amsterdam, at which price no orders can be obtained. The color of English-made is darker, but the light American color is preferred.

Cotton-seed cake and meal find competition in linseed cakes, which article is largely imported from the United States. These articles also come into competition with domestic crops of cattle fodder, such as beets, etc.

Linters are not imported here. In leaving the oil factories the cotton shells are sent to spinners to take off the remaining cotton as far as possible, and after that the residue is used for fertilizing purposes.

DENMARK.

COPENHAGEN.

USE OF COTTON-SEED OIL AND COMPOUND LARD.

Consul-General Ernest A. Man, writing from Copenhagen April 22, furnishes the following report:

Cotton-seed oil and compound lard are used to a considerable extent in the oleomargarine industry in Denmark, about 2,200,500

pounds of the latter and 1,102,500 pounds of the former being used annually. The greater part of the cotton-seed oil used is what is known as the finest quality of "butter oil," and the compound lard used is also of the best quality.

Cotton-seed oil is used in the manufacture of oleomargarine to give it the proper consistency. Peanut oil and sesame oil are also used for this purpose. These oils, however, are, as a rule, much dearer than cotton-seed oil. About 1,102,500 pounds of peanut oil and 3,858,750 pounds of sesame oil are used annually.

During the last year there was a decrease in the use of cotton-seed oil, as the oleomargarine factories used about 10 per cent of sesame oil, which has in a measure taken the place of cotton-seed oil. Both peanut and sesame oils are pressed here, but a considerable quantity of both is imported, while all the cotton-seed oil hitherto imported has been exclusively of American production. There has lately been an effort made to press cotton-seed oil here, the result of which is not yet known.

As there is a duty of 4½ öre (1.1 cents) per Danish pund (1.1 pounds) on cotton-seed and other oils, while compound lard is free, it is said that a fine compound lard, namely, a lard made of the finest fresh stearin and best yellow butter oil in the proportion of 20 to 80, would be especially adapted for introduction here. An important condition in finding a market in Denmark for such a compound lard would be that the raw materials used should be the best, and that the manufacturers could be certain that the proportions of the raw materials used would be carefully adhered to, so that there might always be a certainty of obtaining the same combination in the lard purchased for the manufacture of oleomargarine.

The importation of cotton-seed cake into Denmark during the last three years was as follows: 1901, 406,822,500 pounds; 1905, 446,512,500 pounds; 1906, 455,332,500 pounds. There is no duty on cotton-seed cake and meal.

It is estimated that fully one-half of all the oil cake imported into Denmark consists of cotton-seed cake. The oil cake which comes in competition with cotton-seed cake is sunflower-seed cake, rape-seed cake, and flaxseed cake. By far the greater portion of the cotton-seed cake imported comes from the United States. A very small quantity comes from Russia, and a still smaller portion of so-called Bombay cotton-seed cake made from Indian seed comes here by the way of Hull, England. Importations of sunflower-seed cake come mainly from Russia, as well as some rape and flaxseed cake.

While the importation of cotton-seed cake has been steadily increasing, the quality of the cake has been, it is said, deteriorating. The farmers here demand a light-colored, crisp cake, free from hulls, but they say that present deliveries show, as a rule, dark cake full of hulls and often as hard as stone, and that it is seldom that cake is seen of a light color and with a minimum of hulls.

BELGIUM.

ANTWERP.

LARGE IMPORTS OF MEAL AND CAKE FROM UNITED STATES.

Consul-General Henry W. Diederich, of Antwerp, writes, February 27, that according to the latest complete statistics for 1905 and the provisional statistics for 1906 cotton-seed products were imported for the Antwerp market in quantities shown by the following table:

IMPORTS OF COTTON SEED AND COTTON-SEED OIL INTO ANTWERP, 1905 AND 1906.

	1905.	1906.		1905.	1906.
Cotton seed:	Tons.	Tons.	Cotton-seed oil:	Tons.	Tons.
United States.....	2	918	United States.....	5,421	2,919
British India.....	1,533	252	England.....	3,610	4,457
Brazil.....	368	201	Holland.....	1,512	1,904
Turkey.....	68	16	France.....	2	3
Hamburg.....	120	98	Hamburg.....	16	13
Other countries.....			Other countries.....	18	94

There is no duty on cotton-seed oil or cotton seed. Certain parties, however, wish to have a duty imposed so as to be able to sell their own products at higher prices, but the Belgian Government does not seem to be favorable to any such project.

COTTON-SEED AND COMPETITIVE OILS.

Cotton-seed oil is used here for the manufacture of hard soap, while prime qualities are used for edible purposes, such as the manufacture of margarine. Its greatest competitor is linseed oil, used for making soft soap, while what is known to the trade as technical tallow is also a rival. Olive oil, peanut oil, raven oil, corn oil, rape oil, and palm oil are among the staple articles on this market, and the imports are shown as follows:

IMPORTS OF OILS INTO ANTWERP, 1905 AND 1906.

Kind of oil.	1905.	1906.	Kind of oil.	1905.	1906.
Peanut.....	Tons.	Tons.	Corn.....	Tons.	Tons.
Rape.....	602	305	Olive.....	8,096	9,271
Cotton-seed.....	919	1,041	Palm.....	1,677	1,775
Linseed.....	10,610	9,421	Palm.....	8,087	7,618
	4,207	8,452	Raven.....	2,557	

PRICES OF COTTON-SEED OIL AND COMPETING ARTICLES AT ANTWERP, APRIL 6.

Oil or grease.	Value per 100 kilos.	Manner of delivery.
	Dollars.	
Raven.....	11.77	Naked ex mill.
Linseed.....	9.75	Do.
Corn.....	18.03	Ex warehouse.
Olive.....	12.73	Do.
Rape.....	18.89	Naked ex mill.
Palm.....	15.44-16.21	C.I.F. Antwerp.
Peanut:		
For the manufacture of margarine.....	17.37-25.09	Do.
For the manufacture of lard.....	13.31-15.44	Do.
Cotton:		
American.....	13.51	Ex warehouse.
English.....	13.03	Do.
Tallow:		
Edible.....	19.30-22.16	C.I.F. Antwerp.
Technical.....	16.40	Do.
Butter:		
Belgian.....	52.11-61.76	Do.
American.....	21.23-27.02	Do.

Hitherto American butter has been imported only in sample lots. For edible purposes the markets here are obliged to resort to the importation of foreign oils, as there is no edible oil manufactured from the natural products of this country.

SEED CAKE AND MEAL.

Cotton-seed meal and cake are used for feeding live stock, while the meal is also used for fertilizing purposes. Cotton-seed cakes, however, are entirely eclipsed on this market by linseed and other oil cakes, which were imported as follows:

IMPORTS OF OIL CAKE OTHER THAN COTTON-SEED CAKE INTO ANTWERP, 1905 AND 1906.

Whence imported.	1905.	1906.	Whence imported.	1905.	1906.
	Tons.	Tons.		Tons.	Tons.
United States.....	118,448	162,202	Italy.....	1,338	243
Germany.....	3,630	1,892	Japan.....	370	501
England.....	9,164	9,129	Holland.....	8,000	8,239
Austria-Hungary.....	116	49	Portugal.....	501	717
Canada.....	5,709	8,845	Argentina.....	267	691
Spain.....	825	1,731	Roumania.....	510	151
France.....	22,173	11,763	Russia.....	32,747	24,547
British India.....	3,203	3,482	Other countries.....	903	2,320

Cotton-seed cake and meal compete directly on this market with linseed cake as feedstuffs, but it may be said that all kinds of fodder are competitors. As fertilizers the principal competitors of cotton meal are nitrates and phosphates.

The prices at present per 100 kilos are as follows: Linseed cake, \$3.33; nitrate of soda, c. i. f., \$5.21; cotton-seed meal, c. i. f., \$3.30 to \$3.47; phosphate (per ton), \$10.61 to \$15.44. There are no statistics showing the importation of cotton meal.

MARKET FOR LINTERS.

Cotton-seed linters are used for making floor cloths, the better qualities for bedquilts, woolen fabrics, and coarse cotton thread.

There is, however, no market for linters at Antwerp, the greatest demand being for the factories at Ghent, where about 20,000 bales per annum are consumed, at an average price of \$11.10 per 220 pounds. The fluctuations in the price of this article are so great that it is impossible to give anything definite, wholesale prices varying as much as \$9 in a few months.

GHENT.

DEMAND FOR LINTERS.

Consul W. P. Atwell, of Ghent, reports February 28:

Cotton-seed oil and cotton-seed meal are used to a limited extent in this consular district. It is estimated that approximately 4,000 tons of cotton-seed meal are sold annually in East and West Flanders. All of the cotton-seed meal sold is imported through the port of Antwerp, where important commission houses are located. The meal is sold at Ghent in sacks of 165 pounds for the quality known as "bolted" and in sacks of 110 pounds for the quality known as "prime Texas." It is used exclusively for feeding live stock. The present prices per 220 pounds at Antwerp (February 28) are: Bolted, wholesale, \$3.47, retail, \$3.75; prime Texas, wholesale, \$3.38, retail, \$3.60.

Cotton-seed cakes are unknown to the trade here. Cotton-seed meal competes principally with bran, corn, oats, etc., and in general with all kinds of fodder. The demand for the meal is more or less regulated according to the harvest. A poor harvest is cause for a strong demand for cotton-seed meal, while a successful harvest has the contrary effect.

The consular district of Ghent being the principal cotton-spinning center of Belgium, it is natural that cotton-seed linters are used to a great extent, the total quantity approximating 20,000 bales per annum. The cotton linters imported here are principally used in the manufacture of smokeless powder, woolen fabrics, cotton blankets, and for coarse cotton thread.

The wholesale price now varies from \$6.75 to \$15.44 per 220 pounds, according to grade and market fluctuations. The approximate value of the cotton-seed linters used in this consular district during the past year was about \$400,000. The "A" quality is mostly in demand.

REGULATION OF PRICES.

The demand for cotton-seed oil is wholly regulated by the demand and prices of linseed oil. The cotton-seed oil imported into this district is almost exclusively used in the manufacture of soft soap. When prices of linseed oil are such as to leave little or no profit to the soap manufacturer, the use of cotton-seed oil then enters as one of the principal factors in this manufacture. The prices of cotton-seed oil and linseed oil are regulated by the Antwerp market, and are subject to fluctuation, caused principally by speculation.

A small quantity of English cotton-seed oil is also imported into this district, but when use is made of such oils a marked preference is given to the American article on account of its superior quality. Cotton-seed oil is also extensively used in the manufacture of oleo-margarine, important factories of which are located at Antwerp and Brussels.

LIEGE.

IMPORTER WISHES TO HANDLE COTTON-SEED PRODUCTS.

Writing from Liege, under date of February 18, Consul James C. McNally reports:

Cotton-seed oil, not being sold as such, does not come into direct competition with any other oil, grease, lard, or tallow in this district. Cotton-seed cake or meal is not used as fertilizer in this province. I am unable to locate anything in direct competition with cotton-seed meal or cake as a feedstuff, for while the local users draw on the sugar factories and breweries for the residue of their products they claim that cotton-seed meal is simply used in connection therewith and enriches the milk, etc. There is said to be an increase in the importations of cotton-seed products, but statistics are not available here.

BLENDED WITH OLIVE OIL.

France formerly shipped in an enormous quantity of olive oil said to be strongly blended with cotton-seed oil. There is now a prohibitive regulation against such blending unless it be so stated on the invoice and plainly marked on the label attached to the package. There is no discrimination on the part of the Belgian Government against the introduction of cotton-seed oil as such.

While a fair proportion of the cotton-seed oil imported into Belgium finds its way to the local markets, I have been unable to locate a shop or business house, large or small, handling it under that name or any other. It is undoubtedly mixed with some other article or used in the manufacture of something that absorbs the name. It is said that a considerable part of the importation is used in the manufacture of margarine, which, on account of the high price of butter, commands an enormous sale. Cotton-seed cakes are not used as such, but ground into meal, and sell at \$3.59 per 220 pounds. The sifted commands a slightly higher price. From a source other than the Government I learn that in 1905 6,175,500 pounds of cotton-seed meal were used in the Province of Liege. Cotton-seed oil, cake, and meal are entered free.

A Liege importer of colonial goods would like to get in touch with the American cotton-seed producers with a view to exploiting the products on the Belgian market under their proper name. His address may be obtained at this consulate.

AUSTRIA-HUNGARY.

TRIESTE.

IMPORTS, CONSUMPTION, AND PRICES.

Writing from Trieste April 3, Consul George M. Hotschick furnishes official statistics showing quantities and values of cotton-seed oil imported into Austria-Hungary for a number of years, nearly all importations being made through the port of Trieste. The consul reports:

While figures showing imports of cotton-seed oil at Trieste are not obtainable from local authorities, all oils being placed in the same category, it is generally agreed that 90 per cent of the entire importation is by Trieste. The following table shows quantities and values of cotton-seed oil imported into Austria-Hungary for the years stated. Tariff rates are not included in values, which are given in United States dollars.

IMPORTS OF COTTON-SEED OIL INTO AUSTRIA-HUNGARY, 1895-1906.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	<i>Pounds.</i>	<i>Dollars.</i>		<i>Pounds.</i>	<i>Dollars.</i>
1895.....	14,680,872	675,509	1901.....	30,905,560	1,797,854
1896.....	19,087,427	919,777	1902.....	25,915,600	1,691,815
1897.....	28,947,629	1,296,387	1903.....	32,756,283	1,589,884
1898.....	36,874,360	1,632,308	1904.....	34,692,688	1,678,072
1899.....	37,532,617	1,820,738	1905.....	42,347,729	2,438,850
1900.....	30,394,373	1,588,658	1906.....	48,311,551	2,674,168

CAKE, MEAL, AND LINTERS.

Cotton-seed oil is used in this consular district as table oil. It is also used to a great extent in the manufacture of artificial butter, and in small quantities in compound lard, and also in the manufacture of soap.

Cotton-seed cake and meal are not used nor imported at Trieste. The consumption of oil cakes is slight. The products of the oil-cake factories in this district, consisting of cakes made of linseed, cocoa, sesame, and rape, are exported to England and Germany.

Lately cotton seed has been imported at Trieste; last year about 11,023,000 pounds. On cotton seed, as on all other oil seeds, there is no import duty in Austria. The cotton seed is utilized by some factories.

Cotton-seed linters are neither used nor imported at Trieste.

In the northern part of Austria, especially in Bohemia, cotton-seed cakes are used to feed cattle, but not in large quantities. Exact figures can not be given because the statistics put oil cakes of all kinds in the same category. The total import of all kinds of oil cakes into Austria-Hungary for the year 1906 was 22,114,342 pounds, valued at \$292,373. The exports were 70,549,845 pounds, valued at \$1,109,786.

Cotton-seed oil competes with olive, sesame, and peanut oils as table oil. Often it comes mixed with the oils mentioned and is sold as edible oil. In the manufacture of artificial butter cotton-seed oil competes with sesame and peanut oil. It competes in the manufacture of soap with several fatty products; principal competitors are cocoa, palm, and linseed oils, and mowrah and tallow and the lower graded sesame and peanut oils.

In what quantities these competitors of the cotton-seed oil are used can not be stated; there are no trade statistics in this respect. It is estimated that the annual production of sesame oil and peanut oil in the city of Trieste amounts to 22,046,000 pounds, valued at \$1,827,000.

Tallow, premier jus, and other fatty substances of animal origin are produced annually in Trieste to the amount of from 440,920 to 661,380 pounds, valued at from \$30,450 to \$45,635. The production of linseed and cocoa oils amounts to 15,432,200 pounds, value \$1,218,000, annually.

TARIFF RATES AND SPECULATION.

The increase in the imports of cotton-seed oil in 1905 and during the first two months of 1906 has its foundation in speculations. On March 1, 1906, the new Austrian tariff came into force, and the duty on cotton-seed oil was raised from \$1.93 to \$8.12 per 100 kilos (220.46 pounds). This increase in the tariff induced not only consumers of cotton-seed oil to speculation, but also agents, and large quantities were imported before the new tariff took effect. The low prices prevailing at that time in America furthered the speculations, and at present there are still 11,023,000 to 13,227,600 pounds of cotton-seed oil unsold in store at Trieste. Since March 1 almost no cotton-seed oil has been imported into Austria. The large quantities in storage and the increased tariff rates after March 1 explain the decline in imports.

A NEW COMPETITOR.

A new competitor of cotton-seed oil has arisen in this country. Heretofore there have been some factories which manufactured oil from plants. These factories have been enlarged lately, and three new ones are building, of which one is at Trieste. It is reported that these three factories will be able to produce 33,069,000 pounds of table oil, enough to cover the previous annual imports of cotton-seed oil. The construction of the three factories was instigated by merchants of Marseille, France. Under such circumstances it will be hard for American cotton-seed oil to compete.

The former use of cotton-seed for the manufacture of artificial butter and compound lard will probably decrease. Instead of it cocoa oil is already used. Butter produced from this oil is under the name of "Glorial," "Kunerol," "Ceres," and other fancy names and is much favored by the public. The retail price is 20 to 24 cents per kilo (2.2 pounds) the wholesale price is 20 per cent lower. This new butter is chiefly consumed in districts with a dense Hebrew population, and replaces lard. The raw cocoa oil is partly produced in Austria from the shells of the fruit of the cocoa palm, and a considerable quantity is imported from Germany and the East Indies.

The prices of the different oils at Trieste April 1, per 100 kilos (220.46 pounds), including barrel, loco Vienna, are as follows:

PRICES OF OILS AT TRIESTE.

Oils or fats.	Prices.
Oliver:	Dollars.
First quality	24.35 to 25.39
Lower grades	17.25 to 20.30
Sesame:	
First quality	22.94 to 23.95
Lower grades	20.50 to 21.31
Peanut:	
Table oil	20.71 to 21.31
Technical purposes	15.22 to 15.43
Cocoe:	
First quality	22.33 to 22.74
Lower grades	21.11 to 21.31
Cotton-seed, loco Vienna, duty paid	22.74 to 23.34
Palm	19.79
Linseed	13.60
Tallow	18.27 to 18.47
Premier Jus:	
First quality	21.11 to 21.31
Lower grade	19.49
Bendine bone fat	14.21 to 14.41

REICHENBERG.

FACTS AND FIGURES COVERING THE EMPIRE.

Consul S. C. McFarland, of Reichenberg, furnishes the following report, dated March 12:

Until the new tariff went into operation, March 1, 1906, which discriminated particularly against cotton-seed oil by advancing rates from \$1.93 to \$8.12 per quintal of 220.46 pounds on general imports and fixing a rate of \$2.44 on importations for prescribed technical purposes, the importation advanced rapidly, reaching a value of \$2,435,850 in 1905. Its uses were varied, and new ones were continually being discovered. Besides being used as an ingredient in the manufacture of soap, heavy machine oils, etc., it became an important admixture of margarine, lard, edible tallow, artificial butter, burning, olive, table, and medicinal oils, arousing the hostility of the agrarian element to such an extent that the new tariff resulted. It was chiefly imported in barrels or casks through oil agents and commission houses at Antwerp, and in 1905 sold at \$12.18 to \$14.21 per quintal of 220.46 pounds, the same grades now being quoted at \$14.21 to \$18.24. Peanut and sesame oils, its chief competitors for general purposes, are now quoted at \$15.23 to \$16.24, and pure olive oil at \$20.52.

North, or German, Bohemia is an industrial section, largely mountainous, and a heavy importer of foodstuffs, agriculture and stock raising being confined generally to small peasants in the valleys, dairy interests being unimportant. For this reason cotton-seed oil in this region has been only known to and utilized by concerns manufacturing soaps, margarine, friction oils, toilet preparations, and by drug stores and in textile processes. While probably more

than a proportionate amount of the total imports has been used in this section for such purposes, it is believed that the great bulk has been utilized heretofore in the southern dairy and agricultural portions of the Empire, in both Austria and Hungary, where margarine meets butter and whence came the impetus for the increased tariff. This new tariff has worked such revolution and disaster to the users of cotton-seed oil, abruptly reducing the import from \$2,435,850 in 1905 to a shipment of \$205 since March 1, 1906, that there has not only been great individual complaint, but the Austrian Economical Society took the matter up at a recent meeting, when it was discussed by a speaker substantially as follows:

UTILITY OF FOOD FATS.

Among the fat stuffs imported from the United States into Austria-Hungary oleomargarine and cotton-seed oil are especially to be considered, as paraffin, which only a few years ago played such an important rôle, to-day is scarcely to be mentioned. It is a noteworthy fact that the consumption of artificial food fats is on the increase, and it is probable that, although Austria produces an excellent grade of oleomargarine, the local manufacturers may soon be unable to satisfy the home demand. Even if the agriculturists in Austria strenuously support the false hypothesis that the competition of artificial food fats lowers the price of cows' butter, still, on the other hand, it is well known that just those provinces where the greatest number of cattle are bred are the largest consumers of artificial butter. This artificial product is not used, as might be supposed, to adulterate natural butter, but, as in the Alpine lands, the producers prefer to sell their butter at good prices and use for their own needs the cheaper oleomargarine. Regarded from this standpoint it is of great interest for the country population that no obstacle be placed in the way of preparing good and cheap substitutes, such as food fats. Cotton-seed oil of the best quality is used for the table, and the poorer kinds for industrial purposes, notably in the manufacture of soap. The duty of 40 kronen (\$8) is evidently a strong protective tax, and the wish has been expressed that this be reduced.

At present cotton-seed oil is imported for industrial uses and a duty of 12 kronen (\$2.44) is laid upon this. It is rumored, however, that the acid from cotton-seed oil is to be taxed but 2.50 kronen (\$0.50). Soap manufacturers are glad to use cotton-seed oil, and in large quantities, but the stearin producers would like to see a heavy duty placed upon it, because they regard it as competing with their oleine; but in any case the present duty is designated as altogether too high.

The Austrian producers of all kinds of artificial fats have supported a lively trade with America, for they import the principal raw materials in large quantities from the United States. Very seldom is there any export of fats from Austria-Hungary to the United States, and then only in times of crises.

It may therefore be asserted that the oleomargarine dealers have a very great interest in continuing the imports from the United States as hitherto, while they have but little or no object in keeping up the export to that country. The Austrian margarine manufacturers complain that by the new tariff such a high duty has been laid upon articles principally used in their branches, such as oleomargarine, oleo oil, "Premier Jus," suet, cotton-seed oil, and cotton stearin, that further imports from America are not only made more difficult but absolutely impossible. Thus the abnormal raising of duties on the above articles may result in destroying the existence of these industries here. Although some of the materials used in the manufacture of margarine are produced in considerable quantities in Austria-Hungary, yet cotton-seed oil and cotton stearin, hundreds of thousands of barrels of which are consumed in this industry, can not be produced either in Austria or in all Europe, and are not in any way to be replaced. The manufacture of margarine in Austria is, in the full meaning of the word, absolutely ruined through the unreasonably high duties, for since March 1, 1906, the previously flourishing export trade of final products from Austria to Germany, Switzerland, Italy, the Balkan States, and the Orient has been rendered impossible. The desires of the margarine producers, therefore, are concentrated upon maintaining the present most-favored-nation clause between Austria-Hungary and the United States,

regardless of whether this is done by concluding a general commercial reciprocity treaty or otherwise. They hope to retain the possibility of enjoying in the future the exports of these articles from the United States, and, lastly, in view of the small exports from Austria-Hungary to America, the producers of artificial food fats here have little interest in bringing about a change in the American customs methods.

EFFORTS TO SECURE REDUCED RATES.

Hearings are being held and pressure is being brought to bear upon the Government to secure a reduction of present rates. The new classification, under which cotton-seed oil proper can be brought in at \$2.44 for technical purposes, and now used chiefly for soap, provides, in Bohemia for instance, for the securing of an official permit covering a certain amount from the Landes-Finanz-Direktion in Prague and continued custody under customs officials until used for the specific purposes stated. Of the total quintals of fats and fat acids imported in 1905, 108,748 came from the United States, and 68,979 in the last ten months of 1906, but cotton-seed fats are not specially mentioned. One other noticeable and immediate effect of the new tariff has been the importation of cotton seed, which enters free. The amount of \$65,887 in the first six months is not important, but it is a new departure and indicates that crushing is proceeding, at least experimentally, here.

Austrians are great users of edible oils, especially of olive oil, which is produced in southern sections of the Empire. It is undeniable that cotton-seed oil was becoming a very important constituent of the "olive oil" generally sold, when the new tariff not only cut off the supply of cotton-seed oil, but put a discriminating duty upon adulterated olive oil of \$2.03 as against 81 cents (treaty) for the pure article. Importations of the latter, chiefly from Italy, jumped at once from \$721,168 in 1905 to \$1,043,418 for the ten months of 1906. The principal oil agents for this section are: Gebrüder Fellner, Hugo G. Siegmund, Franz Leclerc, and Karl. Jul. Trenkler, all of Reichenberg.

RAW COTTON AND LINTERS.

The textile concerns of this district use at least half, and some good judges say even more, of the total raw cotton imports. These imports in 1905 aggregated 1,680,705 and in the last ten months of 1906, 1,328,980 quintals, the United States being credited in the first instance with 894,294 and in the latter with 672,457 quintals, Egypt and India combined for the latter period being credited with 485,731 quintals. The remainder, obviously American cotton in the main, is variously credited to Germany, Bremen, England, etc. Linters (Abfälle) are used to an even greater proportion in this district, as compared with total cotton imports, for coarse yarn and textile productions of cheap grade. In official statistics linters proper and cotton waste of all sorts are combined, and of total imports of 96,126 quintals for the last ten months of 1906, 14,960 were attributed to the United States (evidently linters proper), 59,993 to Germany, 11,270 to England, and 3,911 to India. The Indian importations are thought to be linters proper, but the importations from England and

Germany, three-fourths of American origin, are chiefly of so-called "waste" from finer processes. There is a steady demand for linters, but transactions are generally conducted through agents and commission houses at Bremen, direct satisfactory relations with the American market, as in the case of standard cotton, never having been effected. Present prices range from \$8.12 to \$12.18 per quintal of 220.46 pounds, according to color and grade. Of the large number of cotton agents here, the following make a specialty of linters, dealing direct with mills and buying chiefly on the Bremen exchange: Franz Bogner, Heinrich Hauser, R. Heidrich, Gustav Hermann, Hermann & Hoffmann, Lorenz & Müller, Ferdinand Mitwitzky, Herman & Co., Gustav Rehak.

COTTON-SEED CAKE.

Cotton-seed cake is not known on the local markets of this section. Of Austrian importations of miscellaneous seed cake (exclusive of 14,315 quintals of flaxseed cake) in 1906, 18,729 are credited to Germany, 18,078 to Russia, 15,204 to Italy, 11,329 to Roumania, and but 3,375 to the United States. The latter item is probably cotton-seed cake. All oil cakes known in this section are used as a sort of medicinal stock food, but to a very small extent. Flaxseed cakes are quoted at \$2.84 to \$3.05 per quintal of 220.46 pounds.

IMPORTATIONS UNDER OLD AND NEW RATES.

The following table shows quantities and values of the several articles included for the calendar year 1905 and for the ten months of 1906 ended December 31. The latter period was covered by the new tariff and the former by the old rates and classifications.

IMPORTS OF COTTON-SEED PRODUCTS AND COMPETING PRODUCTS INTO AUSTRIA-HUNGARY, 1905 AND 1906.

Article.	Calendar year 1905.		Mar. 1 to Dec. 31, 1906.	
	Quantity.	Value.	Quantity.	Value.
Seeds:	<i>Quintals.</i>	<i>Dollars.</i>	<i>Quintals.</i>	<i>Dollars.</i>
Cotton.....	.....	.....	65,887	.....
Rape, root seeds, etc.....	803,738	1,856,561	44,042	178,811
Poppy.....	25,841	246,548	57,180	384,754
Restioids.....	9,674	61,059	.....	.....
Flax.....	301,503	1,380,030	349,427	1,805,445
Sesame.....	.....	.....	67,617	466,698
Palm kernel, nuts.....	446,641	2,720,044	232,626	1,611,138
Opits.....	.....	.....	207,406	1,726,490
Other oil seeds n. o. s.....	154,914	849,084	89,918	178,408
Total.....	1,242,228	6,553,326	1,002,338	6,267,606
Fats:				
Butter, natural.....	2,939	116,840	1,273	55,286
artificial.....	859	9,565	131	2,433
Lard.....	148,235	2,788,945	819	15,256
Goose.....	.....	.....	9	847
Raven.....	8,127	150,130	818	18,350
Margarine.....	.....	.....	12	190
Cocount oil, clean.....	.....	.....	51	984
Edible tallow n. o. s.....	.....	.....	9	117
Total.....	159,890	3,014,381	3,122	93,643

IMPORTS OF COTTON-SEED PRODUCTS AND COMPETING PRODUCTS INTO AUSTRIA-HUNGARY, 1905 AND 1906—Continued.

Article.	Calendar year 1905.		Mar. 1 to Dec. 31, 1906.	
	Quantity.	Value.	Quantity.	Value.
All kinds of fats for technical purposes, no cotton-seed oil mentioned, total.....	<i>Quintals.</i> 588,917	<i>Dollars.</i> 5,150,847	<i>Quintals.</i> 456,483	<i>Dollars.</i> 4,638,223
Oils:				
Root.....	175	1,847	29	268
Linseed.....	43,711	386,722	16,680	159,571
Resinous.....	1,370	12,561	1,335	17,138
Denatured.....	11,324	91,811	11,269	114,583
Olive.....	166	5,383	249	8,039
Pure.....	25,931	721,118	35,305	1,048,415
Denatured.....	9,115	86,218	7,632	86,741
Mixed with others.....	1,213	20,813	765	12,734
Mixed with cotton-seed.....	29	330		
Sulphur.....	10,943	83,639	27,162	242,075
Sesame.....	8,167	124,343	2,645	41,881
Earlthnut (peanut).....			638	10,232
Denatured.....	2,162	21,139	1,629	21,495
Corn, poppy, sunflower, etc.....	2,802	39,810	131	2,298
Cotton-seed.....	192,088	2,635,850	13	206
For technical purposes.....			8,367	122,719
Other oils n. o. s.....	4,867	54,929	4,172	50,697
Total.....	312,708	4,699,301	118,181	1,934,084
Cotton waste (including linters).....	105,465	1,028,046	96,126	975,679
Oil cake n. o. s.....	120,069	304,679	73,978	187,719

RATES OF DUTY.

In the following table rates of duty in American money per 100 kilos (220.46 pounds) are given:

IMPORT DUTIES, OLD AND NEW RATES.

Article.	Old rate per 100 kilos.		New rate per 100 kilos.	
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Seeds:				
Rape, root, radish, and other like oil seeds.....	0.48	0.61		
Poppy seeds.....	.48	.61		
Flaxseeds and other oil seeds, n. o. s.....	Free.	Free.		
Fats:				
Butter, natural or artificial.....	4.80	7.11		
Butter, natural, fresh.....		4.87		
Lard, goose fat, bacon.....		9.13		
Cocoanut oil, palm oil, vegetable, tallow.....	.48	.51		
Edible greases, n. o. s.....		7.11		
Greases, n. o. s.....	.48	.51		
Oils:				
Root oil, in barrels, etc.....	1.93	2.44		
Linseed oil, in barrels, etc.....	1.16	1.62		
Cotton-seed oil, in barrels, etc.....	2.44	3.12		
For technical purposes, under special provisions, in barrels, etc.....		2.44		
Corn, poppy, sesame, earlthnut, sunflower oil, etc.....	1.93	4.87		
Olive, pure.....	1.16	.81		
Mixed with other oil, under treaty.....	1.92	2.08		
Olive, earlthnut, and resinous oil for technical purposes intended for denaturation under control of special custom officers, under treaty.....		.41		
Sulphur oil.....		Free.		
Root oil, in bottles and like covers weighing up to 25 kilos.....		6.09		
Corn, poppy, sesame, earlthnut oil, in bottles, etc.....		7.31		
Olive oil, in bottles.....		4.47		
Cotton-seed oil, in bottles, etc.....		6.74		
Oils, in bottles.....	4.83	.....	
Cotton linters.....	Free.	Free.		
Oil cake.....	Free.	Free.		

PRAGUE.

MARKET CONDITIONS—EXTENT OF IMPORTATIONS.

Consul Urban J. Ledoux, of Prague, under date of March 9, reports that cotton-seed oil has been imported into Bohemia in fair quantities for several years. He says:

This oil was first imported for technical purposes, but during the past few years it has been imported only for edible purposes, chiefly in the manufacture of butter. As there are no separate statistics of imports into Bohemia, or of local consumption, it is impossible to state the exact amount used each year, but it is estimated at about one-third of the total for Austria-Hungary, or about 7,000 tons in 1905, and only about 300 tons for the ten months of the year 1906, during which period the new tariff has been in force. Prices fluctuate considerably, but are generally governed by the ruling prices in the United States. It is now quoted at \$20.30 per 220 pounds delivered duty paid at the railway station in Prague.

PRODUCTS IN COMPETITION.

Cotton-seed cake is not used in Bohemia. The reason given is the low price of rape-seed cake and palm-kernel cake. Cotton-seed meal is consumed in a fair quantity for feeding purposes, now selling at \$4.06 per 220 pounds delivered at the railway station in Prague.

Cotton-seed linters are not used in Bohemia. Cotton-seed oil comes in competition with peanut oil, sesame oil, and Cochin cocoanut oil, selling at \$23.35, \$22.33, and \$23.35 per 220 pounds, respectively, delivered f. o. b. Prague, duty paid, cash, less 2 per cent discount.

Cotton-seed cake comes in competition with rape-seed cake and palm-kernel cake.

INCREASED DUTY UNDER NEW TARIFF.

The new Austro-Hungarian tariff which came into force on March 1, 1906, raised the duty on cotton-seed oil from \$1.93 to \$3.12 per 220 pounds. The higher duty was imposed for the double purpose of protecting the production of genuine butter and encouraging the production of oils from imported seed. In prevision of the higher duties enormous quantities of cotton-seed oil were imported, the supply having proved sufficient to cover the requirements of the trade to date. For instance, the total import of oils, mostly cotton-seed oil, amounted to \$2,334,322 for January and February, 1906, compared with \$320,510 for the same period of 1905. As these stocks must be exhausted soon, consumers will be obliged to enter the market again, unless the competing oils can be sold at lower prices.

To avoid payment of the higher duty on cotton-seed oil the "Actiengesellschaft zur Erzeugung vegetabilischer Öle," in Trieste, has been trying to produce cotton-seed oil from imported cotton-seed, but I am informed that these experiments have not proved entirely satisfactory. It is reported that the seed suffers so much from the

long journey and frequent handling that it is quite impossible to produce fine oil anywhere but in the country where the seed is grown. If this difficulty could be overcome, the crushing of cotton-seed would no doubt assume large proportions.

It is stated that on account of the higher duty sesame oil and peanut oil will be largely utilized in the production of oleomargarine. The local authorities greatly encourage the use of sesame oil produced in this country for such purposes.

Cotton-seed oil for industrial purposes could be imported at the rate of duty of \$2.44 per 220 pounds, and efforts were made last year to have the duty reduced, but thus far there has been but little encouragement.

Cotton-seed oil is sold delivered f. o. b. Hamburg. The prices quoted per 100 kilos (220 pounds) during 1905 and 1907 averaged as follows: 1905, 43 marks; 1906, 54 marks; 1907, 68 marks. The prices delivered f. o. b. Prague, duty paid, would have been, 1905, \$11.20; 1906, \$21; 1907, \$24.40. Sesame oil produced in Austria-Hungary was quoted as follows per 220 pounds delivered f. o. b. Prague: 1905, \$19; 1906, \$19.60; 1907, \$23. Cochin coconut oil imported via Hamburg can be delivered f. o. b. Prague, duty paid, for \$21.20 per 220 pounds. The prices quoted in 1905 and 1906 were \$15.40 and \$18.60 per 220 pounds, respectively. Peanut oil produced in Austria-Hungary is quoted at \$22.40 per 220 pounds delivered f. o. b. Prague.

SWITZERLAND.

BERNE.

COMPETITION WITH OTHER OILS AND MEAL.

According to Consul Edward Higgins neither cotton-seed oil nor cotton-seed cake or meal is used in the district of Berne. His report is dated March 9 and reads:

There is no prejudice against cotton-seed products, but the price is too high. There would be a good market for cotton-seed oil and a probable market for oil cake, provided these products could be sold at a price considerably lower than that charged for sesame oil and sesame cake. The present price of sesame oil f. o. b. Berne is about \$8 per 100 pounds. Sesame cakes cost \$1.50, and peanut cakes, which are also used to a large extent, \$1.66 per 100 pounds f. o. b. Berne. Peanut cakes contain 46 per cent protein and sesame cakes 38 per cent. This quality is guaranteed by dealers. Buyers are entitled to a Government analysis free upon request. Cotton-seed cakes are said to contain less protein than sesame cakes.

There are no statistics covering the consumption of edible oils or oil cakes for this district. The only statistics available are those representing the total Swiss import of these articles. The imports for 1905 from the various countries follow. The total import for 1906 is also given, but the figures for the different countries have not been published.

IMPORTS OF OILS AND OIL CAKE, 1905.

Whence imported.	Olive oil.	Other edible oils.	Oil cake, meal, bran, etc.
	Pounds.	Pounds.	Pounds.
United States.....	191,620	45,000	22,270.00
Italy.....	2,014,000	45,000	22,775.00
France.....	1,158,000	5,285,000	41,805.000
Spain.....	21,000	5,700	.....
Algeria.....	15,800	88,100	410,000
Austria-Hungary.....	12,000	.....	.....
Asiatic Turkey.....	400	.....	.....
Netherlands.....	.....	154,500	.....
Belgium.....	.....	\$1,800	.....
Russia.....	.....	12,800	1,705,000
Germany.....	.....	217,400	13,681,800
Canada.....	.....	.....	281,000
Other countries.....	.....	.....	280,000
Total imports, 1905.....	3,414,240	6,001,900	80,774,000
Total imports, 1906.....	2,977,000	10,501,000	45,821,000

A small quantity of olive oil is produced in Switzerland near the Italian boundary in the Canton Ticino. The price of olive oil f. o. b. Berne varies from \$6.13 to \$14 per 100 pounds. The French and Austrian oils are of a high grade. The Italian oil is of a low grade, and although listed under edible oil is used mostly for industrial purposes or lubricating. The trade claims that no adulterated olive oil is imported into Switzerland. Falsely branded oil would subject everybody connected with the sale to prosecution by the Government under the pure-food law. It is admitted, however, that adulteration of olive oil is carried on in France and Italy, but only for local consumption or export to countries whose laws are not stringent.

TARIFF RATES—OTHER IMPORTS.

The customs duties are: Olive oil in receptacles containing more than 22 pounds, free; other edible oils, 17½ cents per 100 pounds; oil cakes, oil-cake meal, free. Cocoa butter and margarine products are manufactured in several factories. The packages must be labeled to indicate the true contents. Aside from the import of oils and oil cake mentioned, the following articles were imported in 1906: Lard, 4,150,000 pounds, almost entirely from the United States; price, \$11.40 per 100 pounds; fresh butter, 7,716,000 pounds, at \$24 per 100 pounds; oleomargarine, cooking fat, etc., 2,866,000 pounds, at \$13.10 per 100 pounds; cocoa butter, 1,355,000 pounds, at \$7.88 per 100 pounds; denatured olive oil and almond oil, unrefined, 3,430,000 pounds, at \$5.25 per 100 pounds; coconut and palm oil, unrefined, 6,610,000 pounds, at \$6.13 per 100 pounds.

The names of firms in Berne willing to consider American offers are Joh. Sommer & Co., Zeughausgasse, oils and oil cakes; C. Reinhardt, Bankgässchen, cakes and meal.

GENEVA.

REPORT ON MARKET CONDITIONS AND IMPORTS.

Consul Francis B. Keene writes, March 13, that cotton-seed oil is very little known in Geneva, and furnishes the following particulars:

Few people in this district know what cotton-seed oil is. It is used, but to what extent is a difficult problem to solve. No distinct statistics for this district, and for cotton-seed oil alone, are obtainable; but Federal returns of the customs show that, from the United States, fat oils and vegetal wax (linseed, olive, and resinous oils not included) were imported to a value of \$328,000 in 1905; \$197,246 in 1904; \$243,566 in 1903; \$241,057 in 1902, and \$261,129 in 1901. These figures appear largely to represent cotton-seed oil. It enters this country by way of Bellegarde, coming from Marseille, where the market price recently was 82 francs for 100 kilos (\$15.83 per 220 pounds).

Oil dealers are few. I have interviewed all of the more important, but learned very little from them. They all have or make olive, walnut, peanut, poppy, and sesame oils. A few have a small quantity of cotton-seed oil, although I know positively that some firms import as much as 10,000 kilos (22,046 pounds) at a time.

NO PREJUDICE AGAINST COTTON-SEED OIL.

There is no prejudice whatever against cotton-seed oil. It is generally pure, wholesome, and almost without flavor when fresh. It is said that it quickly gets rancid and is considered as an oil of inferior quality. These are perhaps the reasons why grocers are so reluctant to acknowledge that they keep it, but its cheap price is a feature, and it is sold to a larger extent than is generally known, principally mixed with as little olive as possible.

Large American shipments are said to arrive in Marseille. A good part thereof may be sold for mixing with olive oil. Another part may be used in the manufacture of vegetable butter, together with other oils, such as cocoanut and palm. An important Marseille firm, manufacturers of the vegetable butter called "vegetaline," has lately opened a branch factory in Carouge, near Geneva, in order to fill quicker and with more profit their numerous Swiss orders. Soap manufacturers are using the lower grades. The balance is used in its natural state, but does not amount to much. The semi-wholesale prices per liter (1.0567 quarts) of various oils are—sesame, 21.2 cents; peanut, 27 cents; poppy, 24.1 cents; walnut and olive, 41.5 cents; cotton, 21.2 to 23.1 cents. Olive and walnut oils are mostly used here, the better grades selling easily for 48½ cents and more a liter. The first named comes almost exclusively from the south of France and from Italy. Imported walnut oil comes chiefly from France, but the home product almost equals the demand. Nuts are largely imported from Italy and the French departments of Isere and Gironde.

During recent years the price of butter has increased to such an extent that different kinds of "vegetal butter" have been put successfully on the market. Some of them are made here. "Vegetaline" sells at retail at 27 cents per 2.2 pounds. "Cocose" and "laureol"

are also sold. "Liauba" described as a "yellow grease," is sold at \$22.19 per 220 pounds; "les deux porcs" or "white grease," at \$24.12; "nostras," a "sort of lard" at \$27.98; "oleol," an "oily grease," at \$34.74, and "etoile," or "margarine," at \$34.74 per 220 pounds. These are meant to take the place in the city homes of butter, the high price of which, about 58 cents per 2.2 pounds, is generally prohibitive. In the country Swiss butter still holds its own, being used almost exclusively with lard and retailed at about 34.7 cents for 2.2 pounds.

Oil is not generally used in this part of Switzerland for frying, as in southern European countries. It is chiefly used for salad and mayonnaise sauce. Hence the small prospect of selling here cotton-seed oil in quantity for use in its natural state. Oil dealers, wholesale grocers, and soap manufacturers, of whom a list is appended, are considerable though not large purchasers. The Marseille market controls more or less the whole importation as far as this consular district is concerned, but it is my opinion that cotton-seed oil producers would do well to give some attention to this country. The soap manufacturers are just now advertising that, owing to the increase of value in primary stuff, such as oils and greases, they will have to increase their selling price about 40 to 50 per cent.

OIL AND CAKE IMPORTATIONS.

Oil cake is consumed here only for cattle food during the winter months, when other foods are not to be had or are too expensive, which is the case this year, owing to the long drought of the summer of 1906 and the following severe and long winter. I find that very little cotton-seed cake has ever been imported here. Sesame, copra, and linseed cake, all coming from Marseille, I am informed by a dealer, meet the requirements, although they are all more expensive than cotton-seed cake. Sesame is sold here at about \$3.667 per 220 pounds, copra and linseed at \$3.86, and cotton seed at \$3.18 per 220 pounds, but of the latter none is obtainable here just now.

If American producers want orders, they should send a commercial traveler, preferably of American origin, able to explain the qualities and merits of the products he wants to sell and knowing at least the French and German languages.

The value of imports of oil and oil cakes is shown in the following table:

IMPORTS OF OIL AND OIL CAKES, 1902-1905.

Article.	1902.	1903.	1904.	1905.
	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Oilse oil	435,215	320,880	372,104	284,518
Other oils	431,740	651,875	489,255	498,180
Oil cake and cattle food	1,049,244	1,082,459	1,000,917	1,080,317

Of the oil cake and cattle food imported in 1905 France furnished \$567,420 worth; Italy, \$299,150; Germany, \$185,666; Russia, \$13,703; Canada, \$3,281, and the United States \$2,500.

[Names of Swiss importers and possible importers of cotton-seed products in the Geneva district have been furnished by Consul Keene and are on file at the Bureau of Manufactures.]

LUCERNE.

SCIENTIFIC EXAMINATION OF COTTON-SEED MEAL.

Consul R. E. Mansfield, writing from Lucerne, March 20, reports that cotton-seed products are little used in Switzerland, and gives the results of some experiments made several years ago along scientific lines at the agricultural college in Rütli, for the purpose of determining the value of cotton-seed meal as a food supply for animals. The experiments were made especially in the interests of the dairies, where the question of food supplies for the cows constitutes an important item in the cost of dairy products. Following is an extract and translation of the report made by the college on the result of the tests:

In the winter of 1893 and 1894, we examined by feeding experiments the influence of different residues of the oil production, including peanut, flax-seed, and cotton-seed meal, on the quantity and quality of milk, and the living weight of milk-producing cattle. By feeding the same quantity of each we gained in proportion the best results with cotton-seed meal. Under the circumstances we were led to examine more carefully this food product, which is but little known in this country.

The cotton-seed meal used in Switzerland comes exclusively from North America. The value of the meal as a food varies according to the quality of the seed and the force of the pressure employed in extracting the oil. In composition it may be compared with sesame and peanut cake, but differs from them by the greater quantity of albumen and fattening qualities it contains. The digestible stuffs contained are as follows:

Property.	Cotton-seed cake.		Peanut cake.		Sesame cake.	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Albumen	36.9	40.4	33.5			
Nitrogen free of extract stuffs	16.7	22.2	13.2			
Raw fiber	1	1.3	2.3			
Foodstuff in proportion	1:1.3	1:1.1	1:1.3			
Fat	12.9	6.5	11.5			

The cotton-seed meal used in our feeding process came from Texas and was double or twice ground. After the examination by the Swiss agricultural inquiry department in Berne it was reported to contain 48.9 per cent of alkali albumen, 8.2 per cent raw fat, and 5.5 per cent of ashes. Of digestible food-stuffs the cotton-seed meal contained 41.1 per cent albumen and 7.3 per cent fat. The foodstuffs used in the feeding process showed the following percentages of dry substances and raw foodstuffs:

Properties.	Cotton-seed meal.		Sesame meal.		Hay.		Red beet.	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Dry substances	80.55	80.39	85.61					
Alkali albumen	48.9	38.31	8.74		1.197			
Raw fat	8.2	13.64	1.34		.009			
Nitrogen free of extract stuffs	21.28	46.47	9.373					
Raw fiber	6.46	25.79	.838					
Ashes	5.5	10.66	7.45		1.66			

In reply to an inquiry from this consulate concerning the uses of cotton-seed meal in Switzerland at the present time, the director of the agricultural college at Rütli, where the experiments above referred to were made, reports as follows:

I have to inform you that cotton-seed meal, if used at all in Switzerland, is consumed in such small quantities as to render it an insignificant feature of the import food supply for animals. Its consumption will probably not increase, as its qualities are not especially favorable.

COTTON-SEED OIL LITTLE KNOWN.

There is no classification of oils imported as food products into Switzerland by which the amount of the different kinds of oils may be determined. Olive, cotton-seed, sweet oils, and various other grades are listed together in the schedule of Swiss imports. The best grades of oil of this class pay a duty of \$4 per 220 pounds. All cases, bottles, etc., in which the oil is packed are included in the dutiable weight. Inquiry among local dealers revealed the fact that cotton-seed oil is little known or used in this consular district. There was imported into Switzerland during the year 1905 olive oil valued at \$313,053, about 55 per cent of which came from France, 40 per cent from Italy, and the remainder from Spain, Algeria, and Austria-Hungary. Other edible oils imported in 1905 were valued at \$430,327. Of the total amount of edible oils imported into Switzerland in 1905 the United States is credited with only \$7,528.

Cotton-seed oil comes into competition with olive oil, various vegetable oils, tallow, and butter, the latter being used extensively for cooking purposes in Switzerland. Of the various classes of edible oils consumed in Switzerland olive oil is the most popular and most generally used.

In Switzerland cotton-seed cake or meal comes into competition with bran, hay, carrots, and malt, large quantities of which are furnished by the breweries.

ZURICH.

COMPLAINTS OF DEALERS AGAINST SALES METHODS.

Vice-Consul Joseph Simon, in a report from Zurich, says that in Switzerland cotton-seed oil is a well-known and well-introduced article and in years when prices are low it is used in considerable quantities. His report, dated March 16, follows:

It is imported partly direct from New York houses and partly from the large continental seaports. It is used mainly in the manufacture of soap and butter. Statistics as to quantities used in this consular district do not exist, but it is supposed by leading oil dealers here that the soap makers in the Zurich district are probably using from 3,000 to 5,000 barrels of different kinds of oil annually, and the butter factories perhaps 1,500 barrels. There is a good market here for cotton-seed oil only when peanut oil is scarce and higher in price,

for at even prices the latter is much preferred by both industries. None of these industries ever make direct imports, but secure their supplies from the wholesale dealers here.

Cotton-seed cakes and meal are not used in this district at all. In years when hay is scarce some sesame-seed cakes are imported from Marseille. It is claimed that they are milder and of better quality than cotton-seed cakes and do not cost any more. Cotton-seed linters are not used in this consular district and probably nowhere in Switzerland.

The use of cotton-seed oil, as well as any other oil, for cooking and baking is almost unknown in the German part of Switzerland, with the exception of the little used in the manufacture of butter. Some lard is used, but butter much more extensively, as this consular district is very rich in that production, and it is not probable that there will be any chance for oils to take its place. During the past year not only has cotton-seed oil as soap oil found a larger market in Switzerland than during many of the previous years but also as salad oil, especially during last winter, when to a great extent it took the place of sesame oil, which for a long time has been used almost exclusively. This was on account of the steadily rising prices of the latter. However, as prices for best qualities of cotton-seed oil have lately gone up again, with still more of an increase in view, sesame oil will probably take its old place again before long, as at an even price, or even if about 10 per cent higher, that kind will be preferred, having, it is claimed, a better taste and better flavor.

There is no discrimination on the part of the Government against cotton-seed oil so long as it contains no unhealthy substances. One thing that has brought about a more or less bad feeling among the importers of cotton-seed oil is the frequent delayed deliveries, a complaint that almost never exists with regard to other oils of this nature. All sorts of explanations and excuses are made by the exporters—lack of barrels, etc.—but the dealers here have slowly come to the belief that all such excuses are only made up when American exporters find it profitable to hold back shipments. For such reasons a large oil dealer states that he, as well as others, will naturally again come to pay more attention to other oils.

The following circular was recently sent to the dealers here by one of the New York shippers:

SITUATION OF COTTON OIL.

In August, 1906, it looked as if this country would have a large cotton-seed crop (and of good quality), and in this expectation all the mills sold the various grades of oil for October-March shipment of the new crop at prices which now appear very low. In October the weather in the cotton States very seriously damaged the seed, which catastrophe has two results, viz., that this damaged seed will produce but very little oil of choice quality, and secondly, that the production of oil per ton of seed is less (probably 15 per cent less) than it would have been out of sound seed.

The damaged seed crop hence gives less oil in quantity and poor oil in quality. As a result of all this we shall have this season a minimum supply of choice yellow oils and a very small supply of fine white edible oils, and seeing that the supply of choice yellow oils and fine edible white oils are small the world over, it looks like very high prices during this entire season for these fine grades. The buyers in Europe who purchase this season choice yellow oils and fine edible white oils will have to be satisfied with such qualities as this year's bad seed crop will produce and must not expect the quality

of the previous good crops, for it is absolutely impossible to produce high grades this season. On the other hand and for the above reasons the supply of off oils for soap makers will be very abundant.

The foregoing will explain my opinion that all choice oils will rule high this year, and soap-makers' oil will decline in price, when larger supplies come to the markets. To the damage done to the seed crop this year, two additional and very serious difficulties are unfortunately to be added, viz., first, the blockade on all the railroads in the cotton districts, which makes it difficult to get the oil to the seaboard for export, and, secondly, the scarcity of barrels in this country, which delays shipment from the mills. All these matters will explain why the mills are two months late in their deliveries, viz., inability to get good seed, inability to get barrels, and inability to get the railroads to move the seed and oil. All this is unavoidable. The foregoing is an exact picture of our crop, the explanation of the difficulties to make shipments to Europe, and an opinion as to the course of future prices.

SPAIN.

BARCELONA.

IMPORTATION OF COTTON OIL PROHIBITED.

Consul-General Benjamin H. Ridgely, of Barcelona, on March 20, reported that under the law of Spain cotton-seed oil before given admission must be fatally adulterated. He writes:

Cotton-seed oil was formerly imported here in large quantities when it was possible to sell it at from 15 to 20 pesetas (\$2.70 to \$3.60) per 100 kilos (220 pounds) under the price of olive oil. This was the case when the olive oil crop was small. The imports of cotton-seed oil ceased completely, however, with the promulgation of the law requiring it to be adulterated with petroleum tar. This prohibitive law is still in force, its purpose naturally being to prevent cotton-seed oil from competing with olive oil as an edible product.

Cotton-seed cake and meal are neither imported into Spain nor used here. Waste products from other vegetable oils are occasionally used as fertilizers, but only in very small quantities. As a matter of fact, owing to the backward condition of Spanish agriculture, most of these waste products, which otherwise could be used here to advantage, are exported to England, Germany, and France.

From 500 to 700 bales of cotton linters are imported annually, but their value is not obtainable. They are used for making surgical cotton, and for inferior qualities of yarn. The prices on the quay are from 3d. to 5d. (English) per pound, according to quality.

COMPETING VEGETABLE OILS.

As above stated, cotton-seed oil is not imported and not used, but it may be stated as a fact of possible interest that linseed, sesame, and peanut oils, which compete in price with olive oil, are produced, and are occasionally mixed with olive oil for table use, but only in small quantities, as this process is forbidden by law. Moreover, the public, not being accustomed to these mixtures, imagine (erroneously, it is claimed by the oil blenders) that they are unwholesome.

Owing to the character of Spanish statistics, it is impossible to form any idea of the quantity of each sort of vegetable and nut oil produced. This year, owing to the scarcity of the olive crop, peanuts were ground in unusually large quantities and the oil mixed with olive oil.

It should also be stated in this connection that large quantities of oil are produced here from olive skins, for the extraction of which sulphate of carbon is used. This oil is used in the manufacture of soap and for other industrial purposes. Copra, imported from the Philippines, is also employed here in considerable quantities for oil making. The amount of olive oil produced in Spain in 1906 was estimated at 2,000,000 hectoliters (52,834,090 gallons).

CURRENT PRICES AND CUSTOMS DUTIES.

The average current price from January to August, 1906, was 110 pesetas (about \$18.30) per 100 kilograms (220 pounds). In September and October the price was 135 pesetas (\$23.80), and in December 120 pesetas (\$21.25). This year it is estimated that the crop will not reach 1,000,000 hectoliters. In a good year it would be about 4,000,000 hectoliters.

The customs duty on cotton linters is the same as on raw cotton, viz, 1.30 pesetas (about 25 cents) per 100 kilograms (220 pounds). The duty on olive oil is 30 pesetas (about \$5.80) per 100 kilograms; on cocoa and palm oils, 8 pesetas (about \$1.54) per 100 kilograms; on peanut oil, cotton oil, and all other vegetable oils (except those above indicated) the duty is 27 pesetas (about \$5.21) per 100 kilograms.

For the payment of customs duties gold is exacted, and the Spanish gold peseta is reckoned above at its gold value of 19.3 cents, as given by the United States Treasury Department.

MADRID.

COTTON-SEED OIL USED ONLY FOR INDUSTRIAL PURPOSES.

Vice-Consul Maddin Summers, of Madrid, reports under date of April 10 that relatively little cotton-seed oil is used in Spain, which is attributed to its high price. The vice-consul writes:

Prior to July, 1892, there was some importation of cotton-seed oil, which was used to mix with olive oil, one of Spain's largest productions and now the source of great wealth. The mixture of cotton with olive oil detracted greatly from the sale and value of the latter, and to protect it the Government, on July 5, 1892, passed a law which reads as follows:

In compliance with the law of July 5, 1892, the customs-house officers will mix 14 per cent of turpentine or petroleum with every importation of cotton-seed or rape-seed oil. The cost of the materials employed to denaturize said oils must be paid for by the importer of the same.

For this reason, therefore, cotton-seed oil can not be used in Spain for kitchen consumption, and consequently is not sold for this purpose. Apart from this it pays a duty of 27 pesetas gold (1 peseta=

19.3 cents) per 100 kilograms (220 pounds), in consequence of which it costs in the market from 125 to 130 pesetas (silver) per 100 kilograms, and is sold in the wholesale drug stores at 2 pesetas per kilogram (1 kilogram=2.2 pounds; 1 silver peseta is equal to about 17 cents).

PRODUCTION AND USE OF OLIVE OIL.

The price of olive oil at the refineries is about 130 pesetas per 100 kilograms, notwithstanding the fact that within the last three years the price has advanced some 12 pesetas. These figures show quite plainly that as long as the present tariff rates exist cotton-seed oil could not be used as an edible product, even though the law did not require it to be denaturized to prevent its being mixed with olive oil. The production of olive oil in Spain is more than sufficient to supply the national demand and large quantities are exported. Some years ago Spanish olive oil was considered abroad as very inferior. Owing to this, to the depreciated value of the peseta, and to the low price of the oil many foreign buyers appeared in the market with the intention of acquiring the oil for industrial purposes. They were greatly surprised to find that what they thought was an inferior quality of oil was in fact a superior quality which, when properly refined, turned out to be an excellent oil. From that time on the Spanish olive oil began to get a foothold in the foreign markets, and every year large quantities are exported. Owing to this demand the price in the last few years has considerably advanced.

In 1905 there were exported 34,228,308 kilograms (75,450,926 pounds), and in 1906 18,911,577 (41,692,463 pounds). During the same years there were imported 7,780 (16,152 pounds) and 67,236 kilograms (148,228 pounds), respectively. The olive oil imported comes, as a rule, from France, and is used solely by the more wealthy classes, who are willing to pay a very high price for it. This oil pays a duty of 30 pesetas per 100 kilograms.

Cotton-seed oil would also find great competition in the edible linseed oil, manufactured in Barcelona, and sold at 120 pesetas per 100 kilograms, casing included. The color of this oil is very much like that of the olive oil, but the class is greatly inferior, for which reason it can not compete.

NUMEROUS COMPETITORS.

For industrial purposes cotton-seed oil finds numerous competitors, as follows:

Oil from the last pressings of the olive.—This oil is produced in large quantities in Spain and is sold at from 60 to 65 pesetas per 100 kilograms. The residuum of the olive, after the extraction of the oil, is submitted to the action of carbon sulphide, which acts as a solvent, and is afterwards volatilized. In this way oil is obtained from the last pressings. It is used to a great extent in the manufacture of brown and common soap. As the first material is produced in enormous quantities in Andalusia and Aragon, it is not to be wondered at that huge quantities of this oil are manufactured, or that the price is so low, taking into consideration its origin.

Cocoonut oil.—Omitting that of Cochín China, which is only used by perfumery dealers, the only oil of this class used is that of Ceylon.

It is employed principally by the soap manufacturers of Catalonia in the making of a white soap called "Mora." It is also used in other provinces, but not to so great an extent. The price ranges between 90 and 100 pesetas per 100 kilograms, and the soap produced is of excellent quality.

Palm oil.—Imported from the Philippines and Fernando Po. It is quoted in the markets at the same price as the cocoa oil, though it is dirtier. Both this oil and that of the cocoa pay only 8 pesetas per 100 kilograms duty, and for this reason have an advantage over cotton-seed oil.

Linseed oil.—This oil, used exclusively in the preparation of paints, is worth 100 pesetas per 100 kilograms, and is largely produced in Spain. As already shown, cotton-seed oil can not compete with this linseed oil.

Sesame oil.—Used for perfumery purposes and sold at 105 pesetas per 100 kilograms.

Castor oil.—There are two qualities of this product—the medicinal and the industrial. The price of the latter is about 112 pesetas per 100 kilograms.

Peanut oil.—This is produced in Spain and is used for what cotton-seed oil was formerly employed. By reason of its great similarity to olive oil, it is used for mixing with that article. It is not used for industrial purposes on account of its high price, which ranges from 120 to 125 pesetas per 100 kilograms.

Tallow.—This grease, besides being produced in large quantities at home, is largely imported from London, Hamburg, and Marseille. It is used largely in the manufacture of candles and soap, for which purpose the stearin and olein, respectively, are extracted. Owing to the cheapness of electric lighting throughout Spain, especially in the small towns, the candle industry has greatly fallen off in the last few years. According to the tariff laws in existence prior to July, 1906, tallow paid a duty of 1 peseta per 100 kilograms, gross weight, and now it pays only 0.80 peseta per 100 kilograms, which amounts practically to free entry.

COTTON-SEED MEAL.

The meal made from barley and vetch, and also alfalfa hay, are the main feedstuffs in Spain for cattle, and especially for milch cows. These articles are produced in large quantities in this country. Some cattle owners—very few, however—use other feedstuffs, mostly a substance called "molassine," which is the residue left after the extraction of sugar from the beet root. In the eastern part of Spain cocoanut-oil cake is fed to cattle. This product is made in Catalonia. But as a rule cattle owners are averse to using any sort of feedstuff with which they are not perfectly well acquainted, and to which they have no need to resort, as the feed products of the country as well as green forage are cheap.

CULTIVATION OF THE FIBER.

In regard to raw cotton itself there has been a premium of 50,000 pesetas offered by the minister of agriculture to anyone who would cultivate cotton in Spain and reach a given standard. Many efforts

were made, but the premium has not yet been awarded, as the class of cotton produced was not up to the requirements. The bad results are attributed to the fact that the cultivation of cotton here is not understood; but the fact is that the soil is not the sort required for growing cotton. The almost annual droughts would always stunt the growth of the plant.

VALENCIA.

IMPORTATION PROHIBITED.

Consul H. Abert Johnson, writing from Valencia, March 18, reports that cotton-seed products are not imported at present into that section of Spain. He continues:

Cotton-seed oil was formerly used in this district to blend with olive oil for food purposes, especially in seasons of shortage in olive crop, but it was pronounced by Government analysts to be prejudicial to public health, and as such its importation was totally prohibited some fifteen years ago. Its importation at present is only permitted in a denaturized state, and it is mixed with tar products before passing Spanish custom-houses.

Small sample lots of cotton-seed cake have been imported for experimental purposes as fertilizers, but such trials have not contributed to develop trade in this direction, as the results are not considered sufficiently satisfactory from an economic point of view to justify its employment with the superphosphates, sulphates of ammonia and potash, nitrate of soda, and bone and animal refuse, of which over 90,000 tons are imported annually in this district as fertilizers for the cultivation of fruit, rice, and vegetables.

The sale as olive oil of any other oil, or blending of oils, is prohibited by law, and the tastes and prejudices of the inhabitants, moreover, are strongly opposed to the introduction of any other oil for cooking purposes. In competitive oils and greases for industrial purposes over 9,000 tons of copra, sesame, and similar products were imported here last year for the production of oil for soap manufacturers, these imports coming, in the order of importance, from the Philippine Islands, Singapore, British India, and Mozambique.

SEVILLE.

COTTON-SEED PRODUCTS UNKNOWN.

Consul L. J. Rosenberg, of Seville, reports, April 12, that neither cotton-seed oil nor cotton-seed products of any kind are used in that district, and that with the exception of a very small quantity of cocoa oil olive oil is practically the only oil used. The consul continues:

It is commonly understood that this district produces the purest olive oil. At least such is the reputation of the district, and shippers

are anxious that this reputation be maintained. It is also stated that the bulk of exportations of olive oil from this district goes to Germany and Great Britain, in which countries it is used for oiling machinery. The Seville shippers claim that the mixture of olive oil with cotton-seed oil takes away much greasiness, a quality indispensable to machinery oil. This, coupled with the desire of maintaining Seville's reputation as the "pure olive-oil district," are the reasons given why the shippers of Seville, unlike those of many other places, would not mix their oil with cotton-seed oil.

There is no discrimination by the Government against cotton-seed oil, but the duty is high—27 pesetas (\$5.21) per 100 kilos (220 pounds), gross weight.

TENERIFFE.

NO IMPORTATIONS INTO CANARY ISLANDS.

Consul Solomon Berliner, of Teneriffe, reports, February 27, that cotton-seed oil, cake, meal, or linters are not used in the Canary Islands. All the oil that is imported into the islands for edible purposes comes from Spain, but much of this so-called "olive oil" is either cotton-seed oil or contains a part mixture of it. The products of cotton seed pay no duty, but on oils of all kinds there is an octroi tax. The wholesale price ranges from 24 cents to 29 cents per 1.057 quarts.

NORWAY.

CHRISTIANIA.

IMPORTS AND PRICES—TEXAS MEAL PREFERRED.

Consul-General Henry Bordewich writes that the import of cotton-seed oil into Christiania is estimated by dealers at 2,000 tons (4,400,000 pounds) per annum and that the importations are steadily increasing from year to year. The consul-general continues, writing under date of March 25:

It is impossible to obtain exact figures, for the reason that cotton-seed oil is not given separate classification at the custom-house, but is entered promiscuously with several other oils. Cotton-seed oil is largely used in the margarine factories; some is used also in canning establishments, and the poorer qualities in soap factories. As a rule the manufacturers import the oil themselves without middlemen. The purchases are generally made in the spring and summer months. On inquiry at several margarine factories I learn that "summer yellow" and "winter white" are the qualities preferred. Prices are so fluctuating that it is difficult to name any average price.

Cotton-seed oil arrives put up in large casks holding from 374 to 396 pounds. Price is stipulated in English money per hundredweight (112 pounds). Cotton-seed oil is, according to official statistics, imported to Norway from the United States, Great Britain, Holland, Germany, and France. The larger portion of it is American oil.

Cotton-seed oil comes in competition with oleo oil, neutral lard, cocoa oil, arachis (or peanut) oil, and olive oil. All of these oils are used in margarine factories, but the peanut and olive oils are principally used in the fish-canning establishments. The peanut oil is claimed to be quite a superior article. Prices on all of these oils are mainly determined by the large dealers in Chicago, Rotterdam, and Paris, the larger portion of the goods by far being imported from America, Holland, and France.

LIMITED USE OF COTTON OIL.

Cotton-seed oil, being a comparatively new article, is not made use of in the quantities and for as many purposes as it deserves. In the following statement, compiled from the last published official statistics, is given the average annual import, price, and value of some of the competing articles, as far as the same can be separated and ascertained, for the Christiania consular districts:

Article.	Quantity.	Per pound.	Value.
	<i>Pounds.</i>	<i>Cents.</i>	<i>Dollars.</i>
Oleo oil and neutral lard.....	9,000,000	10	90,000
Olive oil.....	190,000	12	22,800

The average annual import to the whole Kingdom of Norway of such of these articles as are classified may be placed at 22,240,000 pounds oleo oil and neutral lard and 1,383,800 pounds olive oil. A portion of the article imported under the name of olive oil is in all probability peanut oil and cotton-seed oil appearing under aliases, mixed or unmixed, with other oils. Prices on edible oils and lard are very fluctuating. To quote average prices is difficult. Prices on certain grades of cotton-seed oil c. i. f. Christiania in 1907 were quoted February 2 as follows: Choice butter oil, \$7.97 per hundredweight (112 pounds); summer yellow, \$7.67. March 18 choice butter was quoted at \$8.55. No quotation of winter white.

Prices on other edible oils and lard on January 31 were:

Choice neutral lard...per cwt....	\$13.14	Arachis oil—Continued.	
Imitation neutral lard...do....	12.40	Ruflisque.....per 220 lbs....	\$20.65
Extra oleo oil.....do....	12.52	Gambie.....do....	19.50
Oleo oil No. 2.....do....	12.16	Olive oil:	
Extra oleo stock.....do....	13.14	Best quality.....do....	28.95
Oleo stock No. 2.....do....	12.52	Second quality.....do....	27.00
Cocoa oil.....per pound....	.11	Lower quality.....do....	25.10
Arachis oil:		Bottled.....per liter....	\$0.54-.63
Ruflisque extra...per 220 lbs....	21.80		

As far as I am able to learn, cotton-seed linters have not as yet been imported into Norway.

SEED CAKE AND MEAL.

The average annual import of these articles may be placed at 40,000,000 pounds, valued in the custom-house statistics at \$3.28 per 220 pounds. At least two-thirds of this is imported to the Christiania district. Prices ruling at the present writing are: Cotton-seed meal, \$33.80 per 2,240 pounds, c. i. f. Norwegian ports; cotton-seed

cake not quoted. The quantity of the import varies much from year to year, depending on the season's crops of hay, turnips, and potatoes. Cotton-seed meal is used exclusively as feed for domestic animals and is highly prized by the farmers as such. Prime bolted and decorated Texas, with a warranted analysis showing 54 to 56 per cent protein and fat, are preferred. The brands known as prime cotton-seed meal and prime bolted cotton-seed meal are in less demand. I am told that the last-named article will find a market, provided it is made in Texas. The people over here appear to have a prejudice against meal coming from other States, many of the consumers claiming that meal from Texas is far more nutritious than meal coming from Louisiana, Arkansas, and Mississippi. Cotton-seed meal is now imported directly from the United States. A few years ago it was handled nearly exclusively by German jobbers. It is said that the meal was reground in Germany and thereafter sold to other European countries. Of cotton-seed cake, the imports into Norway are light. Cotton-seed meal arrives packed in sacks holding 100 kilograms and 75 kilograms. Prices are quoted in English money for English or long ton of 2,240 pounds.

COMPETITION.

Cotton-seed meal and cake comes primarily in competition with corn, linseed meal, gluten meal, and peanut cake. The annual reports to my district of these articles as far as I am able to ascertain are: Corn, 15,180,000 pounds; linseed meal and cake, 550,000 pounds; gluten meal, 1,100,000 pounds.

The imports to the whole Kingdom are, corn, 30,146,600 pounds, valuation at custom-house \$2.60 per 220 pounds; linseed meal, 660,000 pounds, valued at \$3.22, and gluten meal, 1,166,000 pounds, valued at \$2.15.

There is of late considerable import to my district of peanut cake. Prices quoted January 31, c. i. f. Christiania, were \$35.70 to \$36.20 per long ton for both peanut ruffisque and koromandel. This article when imported in large lots generally arrives in bulk in ships' hulls, not in sacks—principally in small sailing vessels carrying 300 to 400 tons. It is bought from France and Holland. The peanuts are by these countries imported from Algeria. Prime bolted and decorated Texas cotton-seed meal was quoted March 25 at \$34.80 per long ton. The market price on corn averages 60 cents per bushel.

ADULTERATION CHARGED.

The consul-general forwards the following translation of an article taken from a local newspaper:

Mr. Hals, chemist in the Norwegian department of agriculture, made some statements at the last session of the farmers' union which are likely to draw the attention of the agriculturists.

Of the costly cotton-seed meal, which is so freely used, large quantities are sold holding as low as 30 per cent protein and fat, while the regular pure and unadulterated article holds on an average from 54 to 60 per cent. The adulterated article has nevertheless been sold at about the same prices as the prime goods.

The best qualities of peanut meal holds about 58 per cent protein and fat. One sample which was analyzed gave only 8 per cent. It was largely mixed with the shells of the nuts and held 66 per cent cellulose, and was worth but little more than sawdust.

The expensive linseed meal has also been subject to adulteration. This has gone so far that out of 93 analyzed samples the station declared 10 as adulterated and 10 others as impure. No adulteration was found in linseed meal delivered from Norwegian mills.

BERGEN.

SUGGESTION FOR DOUBLING IMPORTATIONS.

Consul Felix S. S. Johnson, of Bergen, reports, March 5, that it is only a few years since cotton-seed oil found a market in Norway. The consul writes:

In this consular district it is used in the manufacture of oleomargarine and cocoa oil. Orders for these articles are made through European commission houses. Each year shows a marked increase in cotton-seed oil importations at Bergen, and I believe that if the manufacturer and the importer could arrange to do business directly the sales would be doubled in a very short time. Cotton-seed linters are not used in this consular district.

The only oils which cotton-seed oil comes in competition with are peanut and sesame oils, both imported from Africa, the former being 30 per cent higher in price than olive oil. As those oils are not directly imported into Bergen, I am unable to give the aggregate annual quantity and value of the sales. In 1905 there were imported direct from New Orleans 868 tons of cotton-seed meal, and in 1906 6,659 sacks from Galveston, Tex., both of which shipments were made to Stavanger. Bran and other oil cakes are the only competitors of cotton-seed cake or meal in this or other Norwegian ports.

As an edible oil there is no discrimination on the part of this Government against cotton-seed oil, as is seen by the following statement of customs duties, the rate being in kroner per kilo, or 2.2 pounds (krone=26.8 cents):

IMPORT DUTY PER KILO ON COTTON-SEED PRODUCTS AND COMPETING ARTICLES.

Article.	Maximum.	Minimum.
Cotton-seed oil	Kroners. 0.05	Kroners. 0.06
Cotton-seed meal	Free.	Free.
Cotton-seed cake	Free.	Free.
Olive oil .....	.06	.04
Butter, all kinds .....	.06	.15
Tallow, oleomargarine .....	.06	.04
Lard and fat .....	.13	.10

Imports from the United States pay the minimum rates.

I do not believe that the sale of cotton-seed meal or oil cakes can be increased in this consular district, as it is not an agricultural county, but a great fishing port. Olive oil is used altogether in putting up Norwegian sardines, but I am of the opinion that in time many manufacturers can be prevailed upon to substitute cotton-seed oil, which would create a constant demand for this article, not only at Bergen but at other fishing ports in Norway.

IMPORTS OF COMPETING ARTICLES.

The value of tallow and oleomargarine imported into Norway in the years 1904 and 1905, with countries of supply, are shown in the annexed statement:

IMPORTS OF OLEOMARGARINE AND TALLOW, 1904 AND 1905.

Where imported.	1904.	1905.
	<i>Kroners.</i>	<i>Kroners.</i>
United States	2,517,300	1,841,800
Denmark	1,314,600	2,759,300
Germany	1,150,900	1,465,200
Belgium	75,408	20,400
Great Britain	972,000	1,838,000
France	58,200	35,600
Netherlands	46,200	88,800

Importations of olive oil in 1905 were received from Great Britain to the value of 19,300 kroner; France, 427,900; Spain, 16,700; Italy, 39,600. In the same year linseed cakes, oil cakes, and oil meal were received from Belgium to the value of 315,000 kroner.

STAVANGER.

GROWING POPULARITY OF COTTON-SEED PRODUCTS.

Consul B. M. Rasmussen, of Stavanger, reports that cotton-seed products imported into Norway are combined in the official statistics with oils from plants and feedstuffs. Inquiry among customs officers and merchants enables the consul to present the facts contained in the following report, which is dated February 27:

Cotton-seed oil and cotton-seed meal are used in increasing quantities in this district. Of choice butter oil, which is used in the manufacture of artificial butter, the import in 1906 was 677,500 pounds, valued at \$45,831. During the same period the import of cotton-seed meal in bulk, to be used as cattle fodder, was 3,030,484 pounds. The price during the spring and early summer was about \$36 per long ton, but rose to \$41 in the fall. The aggregate of cotton-seed meal imported was 3,030,484 pounds, valued at \$50,125. Cotton-seed linters are not used here. The principal increase in cotton-seed imports has

occurred in the last two years, but the ratio can not be stated owing to the fact that the statistics of imports combines them with oils from plants and feedstuffs. There is no discrimination of any kind against cotton-seed oil.

COTTON OIL AND ITS COMPETITORS.

In the manufacture of artificial butter cotton-seed oil enters into competition with lard, oleomargarine, coconut oil, and peanut oil. No coconut oil was imported for this purpose in 1906, however. The following table gives the quantity, price, and net value of oils and fats imported and manufactured into artificial butter in 1906:

Article.	Quantity.	Price per cwt.	Value.
	<i>Pounds.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Cotton-seed oil	677,500	6.75	45,831
Lard	683,500	10.40	71,708
Oleomargarine	2,865,000	.....	808,550
Peanut oil	440,000	9.21	40,524
Total .....	.....	.....	466,423

A letter received from a manufacturer of artificial butter, sent in response to my request for a statement of the amount of cotton oil imported in 1906, states that the consumption of cotton oil is increasing, and will continue to do so if the quality remains as good as it is at present. It is interesting to note that while the use of cotton oil has increased, the importation of peanut oil, its main competitor, has decreased by one-half, and coconut oil does not enter into the competition now. More than 2,000,000 pounds of olive oil was also imported, but as this oil is used for sardine packing exclusively it does not affect the use of cotton oil as yet.

Experiments have been made with cotton oil as a substitute for olive oil in the packing of sardines. I have been informed by one of the leading sardine packers that the result was most satisfactory, and even experts were unable to distinguish the difference between the two oils. The export of fish canned in oil from Stavanger to the United States exceeds half a million dollars annually, and if the American consumers of canned fish products would take the same view that experts have of the two oils mentioned there would soon be an unprecedented demand for cotton-seed oil.

COTTON CAKE AND MEAL.

The only feedstuffs imported in 1906 were cotton-seed meal and corn. When the price of corn is high, the use of cotton meal increases. This was the case in 1905, in which year there was no import of corn, but the use of cotton-seed meal increased considerably, resulting in a whole ship cargo being imported from Galveston. The total import of corn in 1906 was 67,832 bushels, at 60 cents per bushel, amounting to \$40,700.

INFLUENCE OF IMPORTING SYNDICATES.

Importing syndicates at Hamburg and elsewhere have long enjoyed a monopoly on the sale of cotton meal imported into Norway. Numerous attempts were made by importers in Stavanger in 1904-5 to import the article direct from the mills in the United States, but these efforts were successfully resisted by the syndicates. The names and addresses of cotton-seed mills in the United States were furnished to the importers by this consulate, but they were unable to get quotations on cotton-seed meal either from the mills or transportation companies, although other staple articles, such as corn, wheat, flour, rice, sirup, etc., are always quoted c. i. f. Stavanger. In November, 1905, I reported the first ship cargo ever sent from the United States to Stavanger. This was a shipment of cotton-seed meal which the syndicate at Hamburg suffered to go direct, after exacting the usual commission.

SWEDEN.

GOTHENBURG.

IMPORTATIONS AND CONSUMPTION.

Consul Robert S. S. Bergh, of Gothenburg, reports as follows under date of March 20:

Cotton-seed oil and cotton-seed cake and meal are imported and used in Sweden, but as the Swedish statistics do not mention these articles under separate or special headings it is not possible to say to what extent they are used. Cotton-seed oil is included under the heading "Fat oils, other kinds," and cotton-seed cakes are included under the heading of "Oil cakes." A committee is at present working on a revision of the customs tariff and on a list for better specification of imported goods, and I am informed that cotton-seed oil will be specified in the import statistics from and with the beginning of this year. I am informed that cotton-seed linters are imported in limited quantities for wadding purposes.

OIL AND COMPETING ARTICLES.

The highest qualities of cotton-seed oil are imported and used for the manufacture of artificial butter (margarine); lower qualities for the manufacture of soap. It is said that the import for the latter purpose has decreased lately, because it has been found that corn oil is cheaper. The largest quantity of cotton-seed oil used here for the manufacture of soap is a cheaper and lower grade coming from England, where it is pressed from Egyptian and Indian cotton seed. Such oil is used only when it can be had cheaper than corn oil and linseed oil. The better class of cotton-seed oil used for margarine, etc., comes chiefly from America.

For butter purposes cotton-seed oil competes with peanut oil, cocoa oil, sesame oil, tallow, etc. According to the Swedish margarine law, artificial butter must contain 10 per cent of sesame oil, and margarine cheese must also contain a fixed proportion of sesame oil.

For soap purposes cotton-seed oil competes with linseed, corn, whale, seal, and cod oils, tallow, etc. Besides the linseed oil imported, considerable quantities of this oil are produced within the country from linseed imported and pressed here. A little ordinary olive oil may also be used.

Higher qualities of olive oil are imported in bottles chiefly from France and Italy, and are comparatively expensive. Other edible oil is imported in barrels and sold in small quantities in the grocery stores at lower rates. These two classes of edible oil are together called salad oil. Salad oil, as such, is not much used in this country, but butter and margarine are consumed in considerable quantities. For frying and cooking purposes artificial lard (cocoanut butter, etc.) is also used a little, and natural lard in larger quantities. The sale of cotton-seed oil here, for margarine and soap manufacture, etc., will no doubt depend on the prices, compared with the prices of other oils for the same purposes.

I do not know of any legal restrictions or any popular prejudice against cotton-seed oil.

COTTON-SEED CAKE AND MEAL.

Cotton-seed cake or meal as feedstuffs have to compete with linseed, peanut, rape, corn, sunflower cakes, etc.; further with gluten feed, wheat and rye bran, oatmeal feed, rice-meal feed, molasses feed, and other feeds. Our consular agent at Malmö, who is well acquainted with cattle raisers and producers of butter, reports as follows:

"During the last three years cotton-seed cakes have been imported into Sweden, and of late the import has greatly increased. These cakes were at first imported from New Orleans, but as the quality deteriorated immensely import from there has almost ceased. Cakes are now imported from Texas. They are of choicest quality, and in case they keep up quality the import from there will increase."

IMPORTS FOR 1905.

Although the desired specifications can not be furnished, it may be of interest to see how much oil, cattle feed, etc., Sweden imports. Following are figures for the year 1905, the latest complete statistics issued. Quotations for cotton-seed oil, corn oil, and sesame oil are not available. I understand these oils are sold by agents on telegraphic quotations received by them from their respective houses in countries of export.

IMPORTS OF OILS, GREASE, AND FEEDS INTO SWEDEN, 1905.

Article.	Quantity.	Value.
	Pounds.	Dollars.
Glycerin	85,208	85,208
Lard and lard, natural and artificial	4,279,513	838,910
Oleomargarine	863,033	64,755
Oleins	2,304,838	112,073
Oil, fat (volatile vegetable oils, lubricating and fossil or mineral oils, cotton oil, train oil, and boiled linseed oil not included):		
Linseed and rapeseed oils	1,085,670	56,654
Other kinds (including olive, hemp, palm, castor, nut, cotton-seed, etc.)		
In barrels or casks	31,997,418	1,944,848
In other receptacles	363,519	85,208
Spermaceti	2,500	760
Tallow	10,778,180	681,514
Whale, seal, and cod oil	3,113,080	158,342
Bran, all kinds	297,749,460	\$,619,625
Cattle feed:		
Oil cakes, rapeseed, linseed, sunflower-seed cakes, etc.	228,374,529	\$,439,839
Other kinds, gluten feed, etc.	36,850,842	313,578
Imports from the United States:		
Lard	2,662,517	228,828
Cattle feed:		
Bran	8,796,241	106,300
Oil cakes	2,745,564	41,719
Other kinds	18,477,211	114,683
Oleomargarine	278,116	27,066
Oil, fat (mineral oils, etc., excluded)	11,460,562	697,692
Tallow	2,879,851	163,079

* Statistics are not reliable as to the origin of the goods imported, and it is probable that the quantities coming from the United States were really larger.

WHOLESALE PRICES OF IMPORTS.*

Article.	Price per 100 pounds.	Article.	Price per 100 pounds.
Olive oil, common:	Dollars.	Bone-dust feed	Dollars.
Messina	9.48	1.82	
Malaga	9.11	1.22-1.24	
Linseed oil, unboiled	6.08	1.56	
Rapeseed oil:		Corn-cake meal	1.53-1.61
Raw	8.02	Cotton-seed cakes	1.76
Refined	8.27	Cotton-seed meal	1.79
Salad oil, in barrels or casks:		Gluten feed:	
Superfine	8.58	Globe No. 1	1.43-1.55
Fine	8.23	American	1.49
Lard, artificial	8.00	Linseed cakes	1.73-1.28
Margarine:		Linseed meal	1.79-2.04
Cream—		Molasses feed, in bags	1.16
S 1	16.00	Oat-meal feed	85-1.40
S 2	14.00	Oats for feed purposes	1.40
Common—		Peanut cakes, French or Argentine	2.55-1.90
S 3	13.00	Rapeseed cakes	
S 4	10.00	French	1.46
Seal oil:		German	1.62
Train oil, in barrels	8.00	Rice-meal feed	1.28
Norwegian, in barrels	4.00	Sunflower-seed cakes, Russian	1.61-1.76
Tallow, prime	7.00		

* Quoted from a recent issue of the Gothenburg Market Report.

* Per quart.

IMPORT DUTY.

Article.	Duty per pound.
Linseed and rapeseed oils	Dollar.
Other fat oils, not volatile:	0.0085
In barrels, large or small	
In other receptacles	Free.
Margarine and butter	Free.
Oleomargarine	0.0244
Oleins	0.0244
Oil cakes, bran, and other cattle feed not otherwise specified	Free.
Spermaceti, tallow, whale, seal, and cod oils	Free.

* Croton oil, volatile vegetable oils, fossil or mineral oils, and oils produced by dry distillation not included in the above.

There is also an ad valorem duty of 5 per cent on glycerin.

As I believe that the uses, quality, or properties of cotton-seed oil and meal are not generally known in certain countries, I would suggest that American manufacturers have analyses made of their products with reference to nutritive properties or chemical composition, and necessary experiments or tests with reference to the uses for which such oil and meal can be employed with equal or better advantage than other oils and meal. Furthermore, that the results of such analyses be published in small pamphlets with suitable recipes for cooking, etc., and that the pamphlets be translated into different languages for distribution in foreign countries. The pamphlets could be distributed among retail dealers, bakers, and others, by agents or commission merchants, through arrangements made by the American exporters or American consuls.

RUSSIA.

ST. PETERSBURG.

USE OF NATIVE PRODUCTS—IMPORTATIONS SMALL.

Consul-General Ethelbert Watts, of St. Petersburg, writes under date of February 28:

Cotton-seed oil and cotton-seed cake are used in Russia, and their consumption is increasing, but practically none is imported from America at present, as Russia herself is growing cotton and has several cotton-seed oil factories in Turkestan engaged exclusively in pressing oil from native cotton seed. Recently, since cotton seed from Turkestan has been brought by the Central Asiatic Railroad to European Russia, several new factories for this purpose have been built at Nizhni Novgorod and at Odessa.

Cotton-seed oil in this country has been mostly used in connection with the manufacture of soaps of different grades, and recently, on account of the advance in price of cocoanut oil, cotton-seed and rapeseed oil are being used largely in the place of it for certain burning purposes, particularly for burning before ikons, a general custom in this country. It is estimated that the annual consumption of mineral and vegetable oils for burning or lamp use reaches about 72,000 tons. Russian cotton-seed oil has not as yet become a food product in this country, although it is claimed that its richness in quality would entitle it to such use.

ACTIVITY OF LOCAL MILLS.

Vegetable oils used in Russia for food purposes are principally made from hemp seed and sunflower seed. Of late refined cocoanut oil is being extensively sold for table use. The duty on cotton-seed oil is \$1.70 per 36 pounds, but the Russian Government does not discriminate against any oils used as human nourishment. About five hundred factories are at present engaged in the manufacture of oils in Russia, situated especially in Riga, Libau, St. Petersburg, and Odessa, besides other cities and towns of the Empire. The activity

of these factories is very pronounced in the export of oil cakes, which at the present time has increased to 450,000 tons per year. The following table shows the statistics from 1880 to 1901 in quantity and value of oil cake produced in Russia:

OIL CAKE PRODUCED IN RUSSIA, 1880-1901.

Year.	Quantity.	Value.
	Tons.	Dollars.
1880.....	30,519	906,915
1881.....	142,182	3,095,695
1887.....	259,739	7,080,520
1888.....	749,304	7,353,145
1889.....	878,562	8,228,670
1890.....	862,872	7,797,950
1901.....	845,024	8,622,046

EXPORT OF SEEDS AND CAKE.

Russian exports of seeds from which oil is made and of oil cake are shown in the following tables:

EXPORTS OF OIL SEEDS AND OIL CAKE, 1897-1901.

Seeds or cake.	1897.	1898.	1899.	1900.	1901.
Seeds:	Tons.	Tons.	Tons.	Tons.	Tons.
Linseed.....	595,330	181,230	242,910	609,876	82,170
Hemp seed.....	11,338	7,856	24,422	11,718	8,694
Poppy, sunflower, and other.....	10,352	12,420	22,220	20,916	11,808
Rape seed.....	100,530	168,948	165,368	71,288	23,418
Total.....	717,750	272,554	454,970	713,808	126,090
Oil cake:	Tons.	Tons.	Tons.	Tons.	Tons.
Linseed.....	177,812	221,076	271,526	148,816	148,878
Hemp seed.....	29,232	19,746	19,512	25,142	31,881
Sunflower.....	76,249	50,202	100,836	150,678	148,940
Rape seed.....	92,352	50,778	65,407	49,979	49,872
Other seed.....	27,450	32,850	30,960	32,976	41,778
Total.....	263,135	374,652	489,331	401,991	424,062

I have not been able to find later statistics than the above, but am informed that both the production and the exportation have been increased somewhat since 1901.

MOSCOW.

PRICES, DUTIES, AND IMPORTATIONS.

Consul Samuel Smith, under date of April 4, reports that no cotton-seed oil is imported into the Moscow consular district on account of the almost prohibitive duty, which is equal to \$1.70 per 36 pounds. The local demand for cotton-seed oil is entirely supplied by the Central Asian cotton-oil industry. The consul further reports:

Cotton-seed oil is used here as a substitute for and ingredient of olive oil, lard, etc., and largely in the manufacture of soap. Central

Asian cotton-seed oil is sold here at \$2.25 per 36 pounds and is shipped to the Moscow market from Kokand, Central Asia. The freight and expenses from Kokand to Moscow amount to about 75 cents per 36 pounds. Statistical data as to the aggregate quantity and value of the various kinds of oils sold are not available. It is estimated, however, that approximately 19,355 tons of cotton oil are sold on the Moscow market.

The following prices are quoted in Moscow at present (April 4): Olive oil, \$1.60 per 36 pounds; cocoanut oil, \$4 to \$1.25 per 36 pounds; palm oil, \$4 per 36 pounds; hemp-seed oil, \$2.75 to \$3 per 36 pounds; sunflower-seed oil, \$2 to \$2.10 per 36 pounds.

According to official data the following quantities of oil were imported into Russia in 1905 and for eleven months of 1906, returns for December not being available:

OIL	1905.		1906 (11 months).	
	Quantity.	Value.	Quantity.	Value.
	Tons.	Dollars.	Tons.	Dollars.
Olive.....	9,387	1,494,000	7,661	1,395,000
Palm.....	5,516	436,500	649	92,000
Cocoanut.....	435	60,000	4,516	576,500
Other vegetable.....	858	71,500	436	81,500
Cotton-seed.....	13	2,500	10	1,000
Total.....	13,706	2,024,500	13,268	2,057,000

Cotton-seed cake or meal is not used in the Moscow district, either as a feedstuff or as an ingredient of commercial fertilizers.

RIGA.

OIL CRUSHING A GROWING LOCAL INDUSTRY.

Consul Alexander Heingartner reports from Riga, March 19, that there is no import at that port of cotton-seed oil, cotton-seed cake or meal, or cotton-seed linters. The consul continues:

The competition the cotton-seed products would meet in this market, besides butter, lard, etc., are the productions of the Russian crushing industry. The articles used by this industry as raw material are the indigenous oleaginous seeds—linseed, hemp, rape, and sunflower—and the imported copra. Copra was introduced into Russia in the last quarter of the last century about simultaneously by Riga and St. Petersburg crushers, and the extraction of oil from it has developed into an important industry, the chief seat of which is in the harbor cities of the Baltic, there being three mills in St. Petersburg, three in Riga, and one in Libau, against two in Odessa and one in Sosnovice. The oil does not compete with that from indigenous seeds, as it is chiefly used in soap manufacture to replace tallow, in which article Russia is deficient, the demand from the eastern governments being very large, besides which cocoanut oil mixed with rape-seed oil and vaseline is used for ritual purposes in place of the expensive imported olive oil.

The amount of copra imported into Riga for the year 1906 amounted to 10,240 metric tons (metric ton = 2,204 pounds); the amount of cocoanut cake exported for the eleven months January to November aggregated 1,950 tons; and as the by-product is estimated at 35 per cent of the weight of the original copra there remained 1,640 tons for domestic consumption. No oil was exported in 1906. The average price of the cake was \$30.75 per ton; that of the oil \$150.60 per ton.

COPRA AND LINSEED.

Linseed is the chief raw material of the Riga crushing industry, which pressed in 1906 approximately 12,530 tons, or 78,000 barrels, of oil and 17,680 tons of cake. As no official statistics are published, these figures were obtained privately and are only approximately correct. The quantity of linseed cake exported from Riga for the first eleven months of 1906 was 66,000 tons, against 61,730 tons for the year 1905. The average price of cake was \$32.70 per ton and for oil \$160 per ton, of which but 30 tons were exported.

Besides these staples, exports from this port during the eleven months of 1906 were hemp-seed cake 1,500 tons and rape-seed cake 700 tons. The price of the former averaged \$22.45 per ton, the latter \$27.90 per ton. No oils of these seeds were exported. The local price of hemp-seed oil was \$144.20 per ton, rape-seed oil \$224.30 per ton.

PRODUCTION OF EDIBLE OILS.

Other edible oils produced in Russia are sunflower-seed oil and trans-Caucasian cotton-seed oil. The former is chiefly pressed in the interior, and enters largely into the fare of the Russian people as a substitute for olive oil, costing \$589.65 per ton. Its price in Riga is \$205.10, that of cake \$30.12 per ton. There is no export from this port of either oil or cake. A small quantity of trans-Caucasian cotton-seed oil was brought by rail to Riga, selling for \$188.50 per ton. It is reported that the Government proposes quoting special freight rates for these articles to Russian centers to foster the local industry. The imports of foreign vegetable oils into Riga for the year 1906 were about 350 tons and consisted of olive, castor, palm, etc., but no American cotton-seed oil.

Of American lard the import was 2,940 tons. The export of butter, chiefly to Denmark and England, amounted to 28,720 tons for the first eleven months of 1906. Export prices for butter are from 15 to 22 cents per pound according to quality. The duty on cotton-seed oil is \$1.70 for 36.112 pounds.

BATUM.

EXPORTS TO GERMANY.

Consul William W. Masterson, of Batum, writing under date of March 15, reports that cotton is grown extensively in the Caucasian provinces of Elisavethpol and Erivan and also in the central section of Asiatic Russia. The consul further reports:

All cotton grown in the Russian Caucasian provinces is bought up when in its growing state by agents from the spinning factories at

Lodz and Warsaw, and none of it is sold in the markets abroad. I am unable to find out at present how extensively the cotton seed and cotton-seed oil is used in this country, as there are no official statistics on the subject, but the export returns for the port of Batum for the year 1906 show that during the year there were exported to Germany 24,874,272 pounds of cotton-seed cake and 421,740 pounds of cotton seed. The value of these shipments has not been given. No other country has purchased these products except Germany, and I understand they were exported as feedstuff.

GREECE.

ATHENS.

OIL IN BUTTER MAKING—IMPORTATIONS AND DUTIES.

Consul-General George Horton, of Athens, makes the following report under date of March 1:

Cotton seed and cotton-seed cake are not imported into Greece. Some six years ago the oil was imported from Egypt by the butter merchants, who mixed it with their product. Recently palm oil has supplanted cotton-seed oil, as the butter men of this region believe the former is more nutritious than the latter and its use less easily detected. The price paid for the Egyptian cotton-seed oil was \$11.60 per 220 pounds, and it paid an import duty of 5.79 cents per 2.8 pounds when brought in bulk. It sold for 23.2 cents to 27 cents per 2.8 pounds, and about 84,000 pounds were imported annually. Cotton-seed linters are not used.

OILS AND FATS.

Greece is an olive-oil producing country. In good years the crop reaches as high as 7,000,000 gallons. Palm oil is the product which has been principally imported into this country for mixing with butter. In 1905 the import duty on palm oil was only 5.79 cents per 2.8 pounds. In order to prevent the adulteration of butter the duty on palm oil was twice raised, but without avail. Finally a duty of 57.9 cents per 2.8 pounds was levied, and it is believed this will be prohibitive. In 1906 alone 336,000 pounds were imported. Denatured palm oil, for use in soap making, is imported free of duty.

In 1905 there were imported more than 98,000 pounds of edible tallow, and the duty was 7.7 cents per 2.8 pounds. Little lard is imported, as the native production suffices for the consumption.

The importation of cotton-seed oil into Greece was discontinued several years ago. A prohibitive duty having been laid on palm oil, it is possible that there may again be a demand for cotton-seed oil in limited quantities. The duty on cotton-seed oil has not been raised. It remains at 30 centimes the oke, about 2 cents a pound.

The amount of olive oil consumed in Greece annually is about 48,000,000 to 50,000,000 pounds, the amount raised in good years as in 1905, 84,000,000 pounds, and the quantity exported 7,100,000 pounds in 1905. It will thus be seen that the production more than suffices for the local consumption.

Fine olive oils of known brands are not manufactured to any extent in Greece. The oil is exported largely as commercial oil at from 40 to 60 cents per gallon. On account of its cheapness it has not seemed profitable to the producers to import any substance to mix with the oil.

COTTON-SEED PRODUCTS AND FERTILIZERS.

Cotton-seed cake and meal are used in this country in small quantities for the feeding of cattle, being manufactured here for home consumption. Cotton seed is exported from Greece to Malta and Europe. In January of this year 560,000 pounds were shipped to Italy, at 0.83 cent a pound f. o. b. Piræus.

There are in Greece three cotton-producing provinces: Livadia, Gythion, and Almyros, the annual production of which is about as follows: Livadia, 8,400,000 pounds of cotton and 14,000,000 pounds of cotton seed; Gythion, 560,000 pounds of cotton and 1,400,000 pounds of cotton seed; Almyros, 560,000 pounds of cotton and 1,400,000 pounds of cotton seed.

Attempts have been made here to produce cotton-seed oil, but they have failed thus far for want of proper machinery, and because the seed itself is not rich in oil.

COMMERCIAL FERTILIZER.

Commercial fertilizer is imported here in small quantities. During the year 1904, 173,210 pounds were brought in from France, England, Austria, and Belgium, valued in all at 12,284 francs. In 1905 about 500 tons were imported. Statistics for 1906 are unobtainable. In general, there is a prejudice among the peasants of Greece against commercial fertilizer, who fear that it will harm their lands. Natural fertilizer sells for 1.50 francs per 100 okes, equal to about 283 pounds. This material is used mostly by the more intelligent and progressive currant growers.

It is probable that commercial fertilizer will be manufactured here soon by the Wine and Spirit Company from the currant surplus. The residue, after the tartar has been extracted, is being stored away, with this end in view. Some educational work will need to be done among the peasantry, but the company hopes that this will be easy, as there seems to be less prejudice against a currant product than against fertilizers whose ingredients are unknown.

SERVIA.

BELGRADE.

MARKET YET TO BE OPENED.

Consul M. K. Moorhead, of Belgrade, reports under date of March 26:

Cotton-seed oil and cotton-seed cakes or meal are not used in Servia and cotton-seed linters are unknown. The chief oils and greases used which would come in competition with cotton-seed oil

are olive oil, sesame-seed oil, lard, and butter, the aggregate annual quantity and value of which are as follows:

ANNUAL CONSUMPTION OF OILS AND FATS IN SERVIA.

Oil or fat.	Quantity.	Value.
	Pounds.	Dollars.
Olive.....	2,867,473	138,441
Sesame-seed.....	4,741	205
Cocoa, palm, etc.....	1,662,813	48,983
Lard.....	6,600,000	1,260,000
Butter.....	88,000	132,400

Lard made from pigs' fat is used in great quantities for cooking. The average price in Belgrade is 2 dinars (38.6 cents) per kilo (2.2 pounds). The peasants use lard on their bread in place of butter, which is not used much either for cooking or eating. Butter costs about 3.31 dinars (63.8 cents) per kilo. Cotton-seed cake or meal have never been used as a food for Servian live stock. Maize (corn), barley, oats, and hay are the foods generally used, the annual aggregate quantity and value of which are:

ANNUAL CONSUMPTION OF FEEDSTUFFS IN SERVIA.

Feedstuff.	Quantity.	Value.
		Dollars.
Corn.....bushels.....	22,232,413	19,762,145
Barley.....do.....	4,848,878	2,633,125
Oats.....do.....	4,912,531	1,477,138
Hay.....tons.....	639,984	5,346,108

Commercial fertilizers are not used in Servia, the farmers employing simply animal manure.

RATES OF DUTY.

No effort has ever been made to import cotton-seed products into this country, although Servia produces no edible oils, olive and other oils being imported. There is no discrimination against cotton-seed products other than a very high import duty. The tariff on cotton-seed oil is 100 dinars (\$19.30) per 100 kilos (220 pounds), while that on olive oil, by a special convention with France, is only 18 dinars (\$3.47) per 100 kilos. Under this same convention sesame-seed oil, beech-nut oil, and oil of poppies pay 20 dinars (\$3.86) per 100 kilos. Oil from palms, 5 dinars (\$0.965) per 100 kilos. Of course it is impossible for cotton-seed oil to compete with olive oil so long as this high tariff—nearly six times that imposed upon olive oil—is in force. The only way to have this duty reduced is by a special convention with Servia.

TURKEY.

CONSTANTINOPLE.

IMPORTS RESTRICTED—USE OF VARIOUS KINDS OF BUTTER.

Under date of April 23 Vice-Consul-General William Smith-Lyte, of Constantinople, furnishes the following report:

The imports of cotton-seed oil is restricted to small shipments to be used for the purposes of soap manufacture, which are adulterated at the custom-houses with coloring matter to prevent their use for edible purposes. Statistics for the year ending March, 1901, the latest published, give the total imports of cotton-seed oil as \$4,497. Of this a very insignificant part was from Austria and the remainder from the United States. The sales of this article, owing to legal restrictions, are so small that it is not quoted in the market reports. Hitherto only low-grade oil has been imported. Cotton figures as an article of export from Turkey to the extent of \$2,000,000, and also cotton seed for \$86,000 during the year 1904. No seed is pressed in the Empire.

Cotton-seed linters are not used.

Cotton-seed oil comes into competition in this country particularly with olive oil, which is very largely an article of local product, with sesame-seed oil, coconut oil, and to a less extent with edible tallows, oleo oil, and with native butters.

Olive is grown in Turkey in the Smyrna district (Aidin Vilayet) and the adjacent islands, Mitylene, Chios, the Aleppo Vilayet, and Moudania and Broussa, in the Hudavendighiar Vilayet. In the entire absence of available statistics I can only state that the oil produced is consumed locally to a great extent, the better qualities for edible purposes, 25 per cent, possibly, in the manufacture of Turkish soap, and the remainder is exported. The amount exported during 1904 amounted to nearly \$1,000,000, a little more than one-half of which went to England and about one-tenth to the United States. As the exports vary little, whether the crop be large or small, it is evident that either the quantity exported or that used locally, or both, are adulterated generally with sesame-seed oil when the crop is short.

French official statistics place exports from France to Turkey of olive oil and other fixed oils (nonessential) at \$484,816 in value, in which figures are included coconut oil \$87,300 pounds, sesame oil 7,091,500 pounds, Colza oil 98,700 pounds, the custom-house valuation of these three items being placed at \$397,831. Olive oil is quoted on this market at 84 to 9 cents per pound, according to quality.

IMPORTATION OF MARGARINE.

Margarine is imported from Marseille, France, and reaches about 500 barrels of 200 kilos each (440 pounds). The price varies from 92 to 95 francs per 100 kilos f. o. b. Marseille (8 to 84 cents per pound). This article is admitted by the French authorities not to be pure, but a small quantity of sesame-seed oil is added at the request of the importers to soften it, as in its natural state it is too solid. A higher grade of margarine is also imported from France, to the extent of 20,000 kilos (44,000 pounds), which is used for local adulteration of fresh butters. A small quantity of a superior quality is also imported in this and sold locally under the name of Swiss butter, cooking butter, or Holland butter, at 21 or 22 cents per pound.

Oleo oil is imported directly from New York and via Rotterdam. The annual imports are estimated at about 17,000 tonnes, of which 4,000 are drawn from stocks in Rotterdam. The present market quotation is 9½ to 11 cents per pound, according to quality.

A VARIETY OF BUTTER.

Owing to Russian internal troubles the import of Siberian butter has almost ceased. The imports amount to barely 70,000 pounds, although the local sales have not diminished, consisting of a local preparation of oleo oil mixed with other greases, possibly a small quantity of milk, and perfumed to give the tallow-candle flavor insisted upon by the native buyer. From Trieste is im-

ported a granulated margarine which has all the appearances and taste of Siberian butter. The quotation on the market is 26 cents per pound. So-called Australian butter is a compact suet imported from England in barrels containing about 880 pounds each. Total imports about 200 barrels. Market price, 9½ to 10 cents per pound.

About 150 ox hides, containing 1,100 pounds each of Bulgarian suet, are imported. Market price, about 10 cents per pound.

Between 300 and 400 barrels of mutton suet are imported from England to be used in adulterating local tallows and fats. Price, 34 to 35 shillings per hundredweight.

Couyrouk is the fat contained in the enormous caudal appendage of the Caraman sheep, certain tails containing as much as 54 pounds of fat. It is impossible to estimate correctly the amount of this fat used. It is supposed to reach 2,000,000 pounds. A caudal fat is also imported from Russia and is known as "Couyrouk Samara." The market price is 13 cents per pound.

With a base of oleo oil, margarine, the various fats herein described, and the small amount of local suet, together with the addition of yellow and white sesame oils, and sometimes a small quantity of milk and pure butter, a whole series of products commonly known as butter are sold in this market.

During the winter months a small quantity of lard is imported from America via London in tubs weighing about 25 pounds each. Market price, \$3 to \$3.20 per tub.

Beurre de Coco, vegetable, kuncrol, under which names cocoanut oil is known, is imported to the extent of 110,000 pounds annually. The greater quantity comes from Marseille and is quoted at 83 to 84 francs per 100 kilos f. o. b. Marseille (7½ to 7¾ cents per pound).

Unadulterated fresh butters are imported from Hungary, Switzerland, and Italy to the extent of 24,000 pounds annually. This district receives also about 28,000 pounds of fresh butters from Asia Minor, principally by the Anatolian Railway. Adulterated fresh butters are imported also from the neighborhood, sold in small paper packets labeled "Hungarian Butter," containing 20 per cent of margarine or other substances, to the extent of 44,000 pounds. The same, containing 30 per cent of foreign matter sold in drums, 50,000 pounds.

From Sofia, Adrianople, and Roumelia Hungarian butter is received, containing 20 to 25 per cent of margarine, and sold in packets. The quantity received was 44,000 pounds. The same, containing 30 to 35 per cent of margarine, and sold in boxes of 28 and 56 pounds, was imported to the extent of 55,000 pounds. The total imports of fresh butter amount to about 245,000 pounds.

Sales of Brittany butter, Normandy butter, Cork butter, and Danish butter are small, not exceeding 26,000 pounds.

Bulgaria supplies this market with a white butter, almost liquid, called "manteiga" in Bulgarian. It is sour in taste and costs 5 to 8 cents a pound. It is used in adulterating so-called butters sold on this market. Total imports, 60,000 to 70,000 pounds.

Cotton-seed cake or meal is not used as cattle food nor as a fertilizer, and is not imported to this market.

DISCRIMINATION AGAINST COTTON OIL.

The law operates to the disadvantage of American cotton-seed products. With a change in the law the extent of the importation of cotton-seed oil, as in the case of sesame-seed oil, will depend somewhat upon the result of the year's olive-oil crop. The nineteenth article of the law on sanitary examination by the customs, of June 3, 1905, reads as follows:

"The entry will not be permitted of oils arriving at the custom-houses which, during their examination, are found unfit for food, in consequence of containing substances harmful to health, or being fetid (rancid) and deteriorated. Cotton oil imported for use in industry will be allowed entry after coloration. Greases and various vegetable oils to be used in industry on condition that they are unadulterated and are in conformity with their respective names, their entry will be permitted without coloration. Those which in their actual state are not permitted entry, if their owner desires, after coloration in accordance with science, their entry will be permitted."

HONGKONG.

LITTLE DEMAND FOR COTTON-SEED PRODUCTS.

ABUNDANCE OF PEANUT OIL.

Consul-General Amos P. Wilder, of Hongkong, reports, under date of January 25, that groundnut (peanut) oil is so cheap and abundant that cotton-seed oil can hope to do but little if anything. The consul further reports:

The Chinese produce great quantities of peanut oil and it finds many uses. The present quotations (January 25) on peanut oil at Hongkong are: Best, \$20 per picul (133½ pounds); good, \$18.50 per picul; medium, \$17 per picul. These prices are in Hongkong currency. One dollar Hongkong currency is worth about 55 cents gold. Fook Cheong is the leading dealer in this oil. Tong Hang Yue, Yung Tai Loong, and Kue Yuen are other dealers.

Peanut oil is packed in tins, 4 tins to a case, the case measuring 2 cubic feet 8 inches. Each tin contains 22½ pounds of oil, about 10 gallons per case. Hongkong ships peanut oil to Australia and to some extent to San Francisco. For local choice table uses, this being a British colony, Crosse & Blackwell's and Moreton's oils occupy almost the entire field. One dealer tells me that California olive oil was imported, but, though it was equally as good and much lower in price, families insisted on the British brand. Some cotton-seed oil is imported from the United States by the Chinese in the form of lard compound. In this free-trade port it is difficult to know the extent of this business.

Cotton-seed cakes for cattle feeding would meet the competition of Chinese methods. The bean cake (made of the bean after the oil is extracted) is much in use for this purpose. A principal article of trade from Newchwang and Chefoo, especially to Swatow, is bean cake, used largely as a fertilizer.

Fats from America are of course high. Dealers tell me that compound lard from Chicago, which they once bought laid down in Hongkong for 5½ cents gold, is now over 11 cents gold.

EXPORTS OF COTTON-SEED PRODUCTS.

FOREIGN CONSUMERS OF AMERICAN SEED, OIL, AND CAKE.

The following table shows the value of cotton-seed products exported in each of the four fiscal years ending June 30, 1903-1906. The value of the exports for the fiscal year 1897 is added that the growth of the trade in the last decade may be measured and compared. Cotton linters are not included. For the fiscal year 1905 the exports of linters were valued at \$1,483,925, of which \$866,105 went to Germany, \$253,180 to Belgium, \$131,922 to the Netherlands,

COTTON-SEED PRODUCTS IN FOREIGN COUNTRIES.

\$72,000 to France, \$39,252 to the United Kingdom, and \$24,867 to Italy. Linters are no longer given separate classification in "Commerce and Navigation of the United States," being included with "upland and other" cotton.

EXPORTS OF COTTON-SEED PRODUCTS TO THE PRINCIPAL COUNTRIES, 1897 AND 1903-1906.

Whither exported.	1897.	1903.	1904.	1905.	1906.
Cotton-seed oil:	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>	<i>Dollars.</i>
Netherlands.....	1,470,100	3,772,500	2,108,400	4,084,600	3,307,400
France.....	2,601,500	2,594,000	2,115,400	2,671,400	2,412,200
Austria-Hungary.....	612,700	1,400,800	965,500	1,356,500	1,631,800
Germany.....	430,500	1,238,400	1,062,700	1,475,100	1,518,900
Mexico.....	320,500	1,005,800	1,177,000	692,800	822,200
United Kingdom.....	294,600	814,900	884,100	908,500	785,200
West Indies.....	209,400	432,300	408,400	378,200	564,200
Italy.....	205,700	811,400	547,100	1,669,300	653,600
Belgium.....	121,400	141,400	231,400	426,900	402,500
Canada.....	122,200	339,600	216,900	223,700	342,400
Brazil.....	173,800	329,700	348,800	191,000	229,100
Denmark.....	22,600	313,800	251,400	105,900	145,700
Sweden.....	15,200	95,300	69,700	87,700	157,700
Uruguay.....	51,900	110,100	90,900	81,700	117,200
Norway.....	(a)	69,600	90,700	52,200	83,600
French Africa.....	118,800	125,800	86,800	165,000	78,500
Argentina.....	11,600	18,600	69,600	40,000	49,800
Egypt.....	19,600	76,600	10,200	76,100	42,700
All other countries.....	141,400	824,400	86,300	348,000	288,600
Total.....	6,897,400	14,211,200	10,717,300	15,125,800	13,673,400
Oil cake:					
Denmark.....	482,800	4,062,700	2,422,700	4,514,300	5,078,700
Germany.....	2,657,800	4,034,700	3,800,500	5,436,800	4,478,800
United Kingdom.....	1,414,200	2,381,100	1,894,700	2,275,800	1,681,100
Netherlands.....	600,000	1,546,300	685,400	918,200	890,300
Belgium.....	241,500	583,800	192,900	361,500	659,600
All other countries.....	115,600	125,800	134,900	280,700	255,100
Total.....	5,515,800	12,732,500	9,134,100	13,897,200	13,073,100
Cottolene, etc.:					
United Kingdom.....	222,100	1,141,300	765,100	669,100	1,047,300
Cuba.....	10,700	1,090,500	1,331,100	1,234,700	837,000
Netherlands.....	11,100	174,200	230,000	241,200	446,200
Mexico.....	13,800	100,000	162,900	217,300	439,700
Germany.....	226,500	321,000	477,400	556,400	232,300
Belgium.....	39,100	114,700	40,400	79,400	222,000
Denmark.....	50,100	127,300	63,100	78,300	159,400
British India.....	28,100	44,400	50,300	240,500	58,300
All other countries.....	298,300	824,100	370,100	316,500	754,000
Total.....	857,700	3,607,500	3,581,800	3,613,200	4,154,200
Cotton seed:					
Mexico.....	8,600	46,900	21,200	60,900	71,300
Netherlands.....	700	400	.....	37,600	67,600
United Kingdom.....	150,700	406,800	80,400	85,900	56,400
Germany.....	.....	73,400	22,000	74,900	42,300
Belgium.....	.....	3,400	1,800	.....	17,600
France.....	1,200	.....	300	.....	10,000
British South Africa.....	.....	.....	200	700	1,100
All other countries.....	400	1,800	4,600	2,400	2,100
Total.....	170,600	537,700	141,200	235,800	268,500
RECAPITULATION.					
Cotton-seed oil.....	6,497,400	14,211,200	10,717,300	15,125,800	13,673,400
Oil cake.....	5,515,800	12,732,500	9,134,100	13,897,200	13,073,100
Cottolene, etc.....	857,700	3,607,500	3,581,800	3,613,200	4,154,200
Cotton seed.....	170,600	537,700	141,200	235,800	268,500
Total.....	13,441,500	31,083,900	23,574,400	32,672,000	31,169,000

* Included with Sweden.

CUSTOMS DUTIES.

RATES IN FOREIGN COUNTRIES ON COTTON-SEED PRODUCTS.

In the following table are given the rates of duty imposed by foreign countries on imports of cotton-seed products from the United States:

TARIFF RATES ON IMPORTS OF COTTON-SEED PRODUCTS.

Country.	Unit of quantity.	Rate of duty.	
		Foreign unit.	U. S. equivalent.
<i>Austria-Hungary:</i>		(Krone=\$0.205.)	Dollars.
Cotton-seed oil, in casks, leather bags, and bladders.	100 kilos.....	40 kronen.....	8.12
For industrial purposes.....	do.....	12 kronen.....	2.45
In bottles, jars, and similar receptacles, weighing less than 25 kilos.	do.....	48 kronen.....	9.74
Oil cake.....	.....	Free.....	Free.
<i>Belgium:</i>			
Cotton-seed oil, cake, and meal.....	.....	Free.....	Free.
<i>France:</i>		(Franc=\$0.195.)	
Cotton-seed oil.....	100 kilos, net.....	7.20 francs.....	1.39
Oil cake.....	.....	Free.....	Free.
<i>Germany:</i>		(Mark=\$0.228.)	
Cotton-seed oil.....	100 kilos.....	12.50 marks.....	2.975
Oil cake.....	.....	Free.....	Free.
<i>Greece:</i>		(Drachma=\$0.165.)	
Cotton-seed oil, in bottles or other vessels, except barrels, skins, and the like.	100 oke (282.185 lbs.).....	100 drachmas.....	19.30
In other receptacles.....	.....	30 drachmas.....	5.79
<i>Italy:</i>		(Lire=\$0.198.)	
Cotton-seed oil.....	100 kilos.....	23.50 lire.....	6.8515
Oil cake.....	.....	Free.....	Free.
<i>Netherlands:</i>		(Florin=\$0.407.)	
Cotton-seed oil.....	100 kilos.....	.55 florin.....	.2211
Oil cake and meal.....	.....	Free.....	Free.
<i>Norway:</i>		(Krone=\$0.268.)	
Cotton-seed oil.....	100 kilos.....	.06 kroner.....	.01608
<i>Russia:</i>		(Ruble=\$0.216.)	
Cotton-seed oil.....	Pood (36.113 lbs.).....	3.30 rubles.....	1.6995
<i>Serbia:</i>		(Dinar=\$0.193.)	
Cotton-seed oil.....	100 kilos.....	100 dinars.....	19.30
<i>Spain:</i>		(Peseta=\$0.195.)	
Cotton-seed oil.....	do.....	27 pesetas.....	5.211
Oil cake.....	do.....	1 peseta.....	.193
<i>Sweden:</i>		(Krona=\$0.263.)	
Cotton-seed oil, in casks.....	.....	Free.....	Free.
In other receptacles.....	Kilo.....	.05 krona.....	.0134
Oil cake.....	.....	Free.....	Free.
<i>Switzerland:</i>		(Franc=\$0.193.)	
Cotton-seed oil, in receptacles of all kinds, weighing more than 10 kilos.	100 kilos.....	1 franc.....	.193
In receptacles of all kinds, weighing 10 kilos or less.	do.....	20 francs.....	3.86
Crude, for technical purposes.....	do.....	.50 franc.....	.0965
Oil cake and meal.....	.....	Free.....	Free.

* Including the manufacturing surtax of 14 lire per 100 kilos.
 * Edible oils, denatured for technical purposes, are subject to a duty of 5 dinars per 100 kilos; edible oils, imported in bottles, cans, or other receptacles weighing less than 25 kilos, are subject to a surtax of 20 dinars per 100 kilos.
 * Cotton-seed oil is admitted only when denatured by the customs authorities, the cost of the denaturing materials to be borne by the importer.

APPENDIX

COMPILED IN CONFORMITY WITH SENATE
 RESOLUTION OF FEBRUARY 24, 1908

APPENDIX.

ENGLAND.

HULL.

IMPORTATIONS FROM VARIOUS COUNTRIES—EXTENT OF TRADE.

Consul Walter C. Hamm has secured the following facts of interest concerning the handling of cotton seed at Hull, the British center of this trade and industry, both as to importations and crushing, which he transmits under date of November 22, 1907:

No South American cotton seed, sound or unsound, so far as diligent inquiry can discover, has been imported direct into Hull. It is probable that some may reach here eventually, as South America sends some cotton seed to the United Kingdom; but, if so, it arrives at other ports, is transhipped to Hull by rail, and is not classed here as South American seed. South American cotton seed is also exported to the Continent, and possibly some of it is transhipped to Hull via Hamburg, as a moderate quantity of seed arrives here annually from that port. The quantity of seed exported from the different countries of South America to the United Kingdom in 1905 and 1906, with the value, was as follows:

Country.	1905.		1906.	
	Tons.	Value.	Tons.	Value.
Brazil.....	35,692	\$807,890	28,116	\$740,750
Peru.....	3,013	81,245	3,334	99,885
Chile.....	622	16,735	1,328	41,730
Colombia.....	129	3,535	193	6,810
Total.....	38,556	909,405	32,971	889,235

Hull is by far the largest importing center of cotton seed in the United Kingdom, nearly one-half arriving at this port. It is here that the seed-crushing industry was first started in this country, and this city still holds its place as the largest seed-importing and seed-crushing center in Great Britain. The seed-crushing firms have modernized their plants and developed the business to a great extent during the last twelve years.

The imports of cotton seed into Hull during 1906 were 291,142 tons, or larger than in any year since 1903, when the total reached 299,189 tons. Bombay seed was more in evidence than in 1905, and prices ruled fairly high for this class of seed, varying from \$30 per ton to \$38 toward the end of the year. Egyptian and Turkish seed varied considerably. When the Indian cotton crop is a good one, as it is reported to be this year, enlarged supplies are looked for from that direction, more especially as cake made from India seed is popular among a certain class of farmers on account of the price, which is less than that made from Egyptian seed.

AMOUNT IMPORTED BY ENGLAND AND SCOTLAND.

The imports of cotton seed into England and Scotland during 1905 and 1906, with the value, classified according to the countries from which they came, are given in the following table:

Country.	1905.		1906.	
	Tons.	Value.	Tons.	Value.
Egypt.....	385,615	\$10,571,000	362,592	\$11,666,885
India.....	128,542	2,862,560	232,790	5,322,175
South America.....	38,856	909,405	32,971	889,285
Turkey.....	9,198	199,090	14,084	357,620
United States.....	4,132	101,886	8,007	80,315
Africa.....	553	12,545	2,881	57,860
Total.....	561,696	14,660,886	617,225	18,373,600

Of last year's total imports Hull's share in value was \$8,863,210; London's, \$2,970,070; Liverpool's, \$2,254,935; Bristol's, \$1,841,890; while those of Leith, Scotland, amounted to \$746,965.

The imports of Hull for the ten months ending October 31, 1907, were 309,901 tons, 158,430 of which was Egyptian, against 245,813 tons, of which 136,291 was Egyptian for the same period in 1906. During the same ten months of 1907 the total imports of cotton seed into the United Kingdom were about 600,000 tons.

Egyptian cotton seed arrives from September to April from Port Alexandria. Indian cotton seed arrives here in moderate quantities all the year round, but the bulk comes from May to October, the shipping ports being Bombay and Karachi. Turkish seed arrives occasionally only in very small quantities from Port Mersina and Smyrna.

Cotton seed is exported from the United States to the United Kingdom, but only in small quantities. The imports of American cotton seed into Great Britain during 1906 totaled 3,007 tons, valued at \$80,315, against 4,132 tons, valued at \$101,895, in 1905. Seed importing firms in Hull would willingly do business with American seed exporting firms if prices and other conditions are satisfactory, and they invite correspondence to that end. [A list of the seed importing firms in Hull is placed on record at the Bureau of Manufactures.]

SHIPPING DETAILS.

The largest seed importing firm in Hull imported cotton seed from New Orleans a few years ago, but during the last four or five years they have not made any imports from the United States. The reasons they give are that the seed has not been up to the standard, with the exception of last year, which was an exceptional year, and that they only dealt with one firm, and had considerable difficulty in settling accounts. The claim they make is that more seed was charged for than actually arrived, and no satisfactory arrangements could be made without going to law, the latter course involving too much time and expense. The following statement from this firm should be interesting to American cotton-seed growers and exporters:

American delinted cotton seed is an article in which a large business could be done in Hull, provided that in price it could compete with Egyptian cotton

seed. The seed compares favorably with the Egyptian in normal years. The essential points in seed are that it should be well delinted, guaranteed not to contain more than 7½ per cent brown or damaged, and that great care be taken in shipping that the seed be not stowed near corn or anything that is likely to cause heat or sweat. Some American shippers have wished to sell on the basis of fair average quality of the season, which, however, is quite impracticable, as there are no reliable means of ascertaining what this is, and the shipments are so irregular that there is no means of making a reliable standard.

Egyptian seed is sold on the basis of fair average quality of the season's shipments at time and place of shipment, and as there are shipments from Alexandria nearly every week, monthly standards are made up, which work satisfactorily. Business in American delinted cotton seed is also somewhat handicapped by the fact that the business is done here in cakes and oil on the basis of pure Egyptian or pure Bombay, consequently the products of American delinted seed have to be sold as a special article, which interferes with the free manipulation on a market, and also is not everybody's seed. Should the trade grow and become a considerable factor on our market, many of these drawbacks would no doubt vanish.

Prices for seed during 1907 fluctuated greatly. During November the price ranged between \$28 and \$35 per ton.

SOUTHAMPTON.

AMERICAN COTTON-SEED CAKE PREFERRED BY DAIRYMEN.

Consul Albert W. Swalm, of Southampton, makes the following report, under date of June 7, 1907, on the use of cotton-seed products in the south of England:

Cotton-seed cake is largely used at all the dairy places in the south of England, but none enter the port of Southampton. Inquiries covering nearly 100 large dairymen has disclosed the fact that the seed cake is bought by dealers from either London or northern ports, where ships arrive from American cotton ports. The prices paid for the past three years have averaged \$2 per 100 pounds. The reports nearly all favor the American product as being the freest from all foreign matter and giving best results. One long-established dairyman believed that the American product was worth 25 per cent more to him than any other similar product on the market.

The sum total of American imports can only be named in due course. Cotton-seed oil does not appear as a factor in this section, manufacturers not being prevalent in the south of England. Cotton-seed cake or meal is used only as a foodstuff and meets the eastern product in competition, but the American product commands steadily the better price in the trade I have named and for the reasons given.

Cotton-seed oil has free entry into English ports, and meets with no governmental restraint. It can not be used as an adulterant of olive oil, as the latter must be labeled in bottles and tins as pure olive oil. Those oils sold as "salad oil," or other name, may be adulterated with cotton-seed oil. From the number of such appearing in the retail markets a considerable quantity of the oil must be annually used.

The use of cotton-seed oil in a domestic way is warmly advocated by the vegetarian class as healthier than lard or tallow mixtures, and that the vegetarian sentiment is growing in a solid way is indicated by the decreased use of meats and all meat by-products.

FRANCE.

MARSEILLE.

COTTON-SEED OIL AND COMPETING PRODUCTS AT MARSEILLE.

Vice-Consul-General Paul H. Cram, writing from Marseille, December 20, 1907, in response to interrogatories from the United States in regard to low prices of cotton-seed oil, reports that dealers there agree in attributing the situation in December last to the action of American sellers in disposing of their stocks, such action resulting directly from the financial situation in the United States. Mr. Cram continues:

One of the best-informed merchants in the city advises me as follows respecting the present situation of the oil and oil-seed market at this point:

The present values of edible qualities of American cotton-seed oils (prime summer yellow, winter yellow, and other finer edible qualities) are undoubtedly very low as compared with other edible seed oils. There is every reason to believe that the substantial decline of the last three months must be attributed to forced sales of available stocks, owing to the financial crisis and stringency of money. Otherwise, the general statistical position of edible oils and their respective raw products in Europe is distinctly strong. This is particularly the position of our market here, which is the largest importer of oil seeds and kernels suitable for edible oil manufacture (chiefly sesame seed and groundnuts or peanuts).

Sesame seed, also called gingelly seed.—Reports from India are very unfavorable as regards these new crops. Owing to failure of rains at the sowing season, there is every reason to anticipate a serious falling off compared with the yield of previous years. Thus far the sales made to this market reach barely one-third of the total of previous years. Consequently very high prices prevail. Bombay white sesame seed fetching 47 francs (\$9.07) per 100 kilos (220 pounds), against 36.50 francs (\$7.04) per 220 pounds at this date last year, while oil from this seed is selling 95 to 100 francs (\$18.33 to \$19.30) per 100 kilos, against 80 francs (\$15.44) at the same period last year. At that time American oil was selling: Prime summer yellow at 70 francs (\$13.51) and winter yellow at 80 francs (\$15.44) per 100 kilos c. l. t., while these qualities are now fetching only 62 and 72 francs (\$11.96 and \$13.89), respectively. These prices are chiefly accepted by resellers, while America is asking 65 francs (\$12.54) and 72 francs (\$13.89) to 73 francs (\$14.08).

Groundnuts or peanuts.—Crop reports from the West Coast of Africa (Senegal and Gambia) generally show a deficit of about one-fifth compared with last year's yield. Supplies from this source therefore are likely to fall short of requirements.

For later months there is thus reason to anticipate larger requirements and higher values for American oils, to make up the shortage in sesame and groundnut oils. With this expectation, considerable quantities have been bought here for October to January shipment from America, estimated at approximately 50,000 barrels of prime summer yellow, winter, and off grades. For the later months, however, only moderate quantities have thus far been sold.

ROUBAIX.

USE OF COTTON-SEED OIL—ACTIVE COMPETITION.

From Consul Chapman Coleman, of Roubaix, the following report was received, dated April 17, 1907:

Cotton-seed oil and cotton-seed cake or meal are used in this district to some extent; in what quantities is not ascertainable, there

being no available statistics bearing on the subject. The oil is used chiefly in the manufacture of artificial butter (margarine) and of food oils and greases. About 350 metric tons are imported annually into this district, chiefly through the port of Dunkirk. Much of this quantity finds its way, however, into parts of France situated without this district. The price of the oil is from 83 to 88 francs per 100 kilos. The price of the oil-seed cake, which is used as feed for cattle, is about 12 francs per 100 kilos. (1 franc=19.3 cents; 1 kilo=2.2 pounds).

Cotton-seed linters are used in this district to the extent annually of from 6,000 to 8,000 bales. There are several qualities of the article, selling at from 28 to 38 francs per 100 kilos. These linters, mixed sometimes with other cotton of longer fiber, are spun into coarse yarns, which are employed for upholstery and tapestry weaving or made into a coarse article of cotton cloth, and are also used for linings.

COMPETING PRODUCTS.

Cotton-seed oil comes into competition chiefly with the following oils and greases: Olive, groundnut, gingelly seed, poppy seed, copra butter, tallow, butter, lard, and other edible oils and greases. The prices of these articles are as follows: Olive oil, 125 to 145 francs per 100 kilos; groundnut oil, 90 to 92 francs; gingelly-seed oil, 80 to 95 francs; poppy-seed oil, 92 to 95 francs; tallow, 90 to 95 francs; lard, 132 to 140 francs; and butter, 250 to 350 francs.

Cotton-seed cake or meal come in competition with linseed, rape, groundnut, gingelly-seed, and poppy-seed cake. The prices for these articles are: Linseed cake, 13 francs per 100 kilos; rape-seed cake, 15 francs; groundnut cake, 18 francs; poppy-seed cake, 18 francs, and gingelly-seed cake, 14 francs.

There has been some decrease in the quantity of the cotton-seed products hereinbefore named, and particularly in cotton-seed oil, in consequence, it is said, of the high price of that oil in recent years.

In this region the production of edible oils exceeds the demand, and there is some disinclination to use cotton-seed oil, it being alleged that it becomes turbid and coagulates when the temperature falls. After removal of its color by a process of clarification it is used to some extent in combination with other edible oils.

CALAIS.

COTTON-SEED CAKE PREFERRED TO MEAL.

Consul James B. Milner, writing June 12, 1907, from Calais, furnishes the following report:

Cotton-seed cake is used to an important extent in this consular district, but cotton-seed meal is not employed, as farmers are dubious of its purity, therefore they prefer crushing the cakes themselves. A syndicate of three hundred farmers, having its principal office in Calais, consumed last year 80 tons of cotton-seed cakes.

Bolted and semibolted cotton-seed cakes are much employed for feeding all kind of cattle, especially in the summer time, when the cattle are on grass. It is also used in winter, when the cattle are in the

stables, as a corrective of the use of linseed cake. Unbolted cotton-seed cake is only used as a fertilizer. It would be much in use but for the price, which is too high to compete with other fertilizers.

IMPORTATIONS AND PRICES.

Cakes are imported through Dunkirk, where they are retailed on board cars for quantities of about 5 tons: Semibolted, \$2.60 per 100 kilos (220 pounds); bolted, \$3.42 per 100 kilos. These prices are considered high, as all cakes are expensive at present (June 12).

Articles coming in competition with cotton-seed cakes as foodstuffs are: French linseed cakes, \$3.57 per 100 kilos on board cars at Dunkirk; Russian linseed cakes, \$3.40, same conditions.

Cotton-seed cakes could be used as fertilizers on account of the azote contained in them, but for this use they would have to compete with ravinon, colza, and ricin, which latter can be had cheaper than cotton-seed cake, when the per cent of azote is taken into account.

Ravinon, colza, and ricin meals contain the percentage of azote hereinafter given and can be had at the following prices on board cars at Dunkirk per 100 kilos or 220 pounds, viz: Ravison meal, 4 to 5 per cent azote, \$2.27; colza meal, 4.75 per cent azote, \$2.41; yellow colza meal, 5 to 6 per cent azote, \$2.70; ricin meal, 4 to 5 per cent azote, \$1.91.

As no import of cotton-seed products is made through Calais or Boulogne-sur-Mer, the two principal seaports in this consular district, no statistics are obtainable as to the quantities used.

The consumption of cotton-seed cakes has been increasing in the last few years. Price is the only impediment to a still more important commerce.

[The name of an importer of cotton-seed cakes in Dunkirk, who supplies the syndicate of farmers referred to in this report, is on file in the Bureau of Manufactures.]

NETHERLANDS.

GENERAL MARKET CONDITIONS.

LOCAL CONSUMPTION AND PRICES—SALES OF AMERICAN PRODUCTS MAY BE GREATLY EXTENDED.

Special Agent J. L. Benton, while investigating conditions in foreign markets with regard to cotton-seed products, furnished the following report, written from Rotterdam, May 15, 1907:

The Netherlands is the best individual customer among the family of nations for American cotton-seed oil, buying, in 1906, 12,976,717 gallons, of the value of \$4,236,638, being an increase over 1905 of 1,390,870 gallons. The purchase by the Netherlands is greater than that by France and Germany combined. The gradual increase in the sale of cotton oil to the Netherlands is due almost entirely to the margarine manufacturer. He is very friendly to the American product, because with its use he secures the very best results. It is estimated that at least 85 per cent of the cotton oil received from the

United States enters into the manufacture of margarine. This industry is one of vast importance in the Netherlands and is now in a more prosperous condition than ever before.

Practically no cotton oil from the United States is used directly as a cooking fat. Rape-seed oil and a low-grade English cotton oil are the principal cooking oils, though margarine and a compound lard manufactured in Holland are the most extensively used for cooking purposes. A leading broker in oils told me that there was a great future in this country for American cotton oil as a direct cooking fat. A small quantity of American cotton oil is taken by the compound lard manufacturer in this country, though this is not an industry of great importance. Small quantities go direct to the soap manufacturer.

COTTON-MEAL TRADE.

The trade of the United States with the Netherlands in cotton meal is so small that the figures look ridiculous. Less than 30,000 tons were received during 1906, and the trade here conservatively estimates that not over 20 per cent of that was consumed in this country, the bulk going to the German trade on the Rhine. The Netherlands imported in 1906 237,000 tons of linseed meal, 29,000 tons peanut meal, and only 28,000 tons of American cotton meal. I have been unable to find any explanation of that situation, and am forced to the conclusion that the manufacturer in the United States has not given the meal trade in the Netherlands the attention it should have. There is in this country, especially in the northern section, a vast dairy business, and in all sections much time is devoted to cattle raising. The grass season is about the same as in the southern part of the United States, from April 1 to December, and during the remaining part of the year commercial feedstuffs are used. There is evidently an excellent opportunity to place cotton meal with the Holland feeder.

The trade of the United States with the Netherlands shows up well and has gradually increased during the past ten years. The exports for 1906 show an increase of 30 per cent over 1905. American cotton meal, which is practically unknown in this country, has contributed nothing toward the increasing trade. The idea is prevalent that the Dutch experiment stations have found something wrong with cotton meal. I had a conference with the director of the laboratory at Goes, who informed me that they have never been able to find anything wrong, and now felt quite sure that they would not. For fifty years the Dutch feeder and farmer have been feeding cake, and it will be far easier for the American manufacturer to furnish the cake than it will be to educate these people to a different method of feeding. They think that the cake is ground in order to use some adulterant.

LINSEED AND RAPE SEED.

In the Netherlands only two oil-bearing seeds are cultivated—linseed and rape seed. Both have been cultivated for many years, but as yet the cultivation of neither has assumed any serious proportion. Regardless of the fact that scattered through the Netherlands are many linseed mills that naturally encourage the cultivation of linseed, the acreage has varied but little during the past fifty years. The best seeds produced never reach the mills, but are bought up by

brokers and exported to Ireland. The farmer here prefers to import the Russian linseed for planting purposes. The following table shows the acreage of linseed and rape seed in the Netherlands:

Year.	Linseed.	Rape seed.
	<i>Acres.</i>	<i>Acres.</i>
1905.....	36,534	5,837
1904.....	39,579	5,963
1903.....	36,267	8,650
1899.....	36,537	18,910
1890.....	27,475	70,900

In 1905 the 36,534 acres of linseed in cultivation produced 153,836 hectoliters (24,414,432 pounds) of seed, and the average production per acre has not varied 2 per cent during the past twenty years. The average price paid for linseed during the past three years is as follows: 1906, 260 gulden (gulden or florin=40 cents American) per 100 kilos (kilo=2½ pounds); 1905, 237 gulden per 100 kilos; 1904, 207 gulden per 100 kilos. The imports of linseed and rape seed were as follows (1 hectoliter=2.338 bushels):

Year.	Linseed.	Rape seed.
	<i>Hectoliters.</i>	<i>Hectoliters.</i>
1906.....	3,375,000	1,575,000
1905.....	3,560,000	1,246,000
1904.....	4,014,000	615,000

In addition to the foregoing imports of oil-bearing seed peanuts and sesame seed are imported for manufacture. Only a small amount of sesame seeds reach the Netherlands, and no data as to the amount can be found. The seeds are crushed at Delft in connection with the peanut industry at that place. Imports of peanuts in 1904 were 107,987,000 pounds; 1905, 63,641,000 pounds, and 1906, 65,099,200 pounds. For 1906 the imports are entered as follows:

	Pounds.
West coast of Africa.....	34,918,400
East coast of Africa.....	578,000
Spain.....	1,258,400
All other countries.....	28,344,400

ACTIVE COMPETITORS OF COTTON SEED.

Linseed, peanuts, rape seed, and sesame seed are the four oil-bearing seeds manufactured in this country that compete with the products of the American cotton seed.

The oil cakes from the seed manufactured here are not sufficient. The imports of commercial oil cakes and meal are as follows:

Articles.	1906.	1905.
	<i>Pounds.</i>	<i>Pounds.</i>
Linseed cake and meal.....	475,472,800	408,207,800
Cotton cake and meal.....	63,785,400	15,392,000
Rape seed cake and meal.....	9,743,800	10,288,000
Peanut cake and meal.....	85,140	81,620

For the consumption of these feedstuffs the Netherlands have available domestic animals as follows: Dairy cows, 1,690,463; horses, 295,277; sheep, 606,785; goats, 165,497; hogs, 861,840.

For this number of domestic animals the Netherlands statistics for 1904 showed available 2,982,015 acres of pasture lands, with the grass season about the same as in the southern part of the United States. They show for their total area 134 head of cows for every square mile, as compared with 18 head for the United States.

Linseed cake is practically the only feed that is a competitor of the American cotton cake. It is invariably sold to the feeder in the shape of cake and not meal. The Dutch farmer has inherited the idea that it is only ground for the purpose of adulteration. Of the small amount of cotton meal coming into this country 20 per cent is consumed in the Netherlands and the remainder goes to the German trade on the Rhine. This small amount of cotton meal goes into the province of Zeeland, where some little encouragement has been given the use of cotton meal.

FEEDING FORMULAS AND COST.

The feeding formulas of the largest feeder in Netherlands are here given. Not one of the four formulas contains a particle of cotton meal. This feeder, Mr. H. A. Hanken, directeur of Wilhelmina Polder, located at Goes, stated that it had been a long time since he had used any cotton meal, and that he had no prejudice against it, but cake was wanted and not meal. At this time he is testing the merits of a formula containing molasses. The formulas given me are as follows:

Formula 1:	Kilos.	For milch cows:	Kilos.
Meat (meal)	1½	Mangels	20
Corn meal	1	Ensilage	12
Linseed cake	1	Linseed cake	20
Mangels	60	Hay	10
Formula 2:		Beans	1½
Corn meal	1	For pigs:	
Linseed cake	2	Meat meal	½
Beans	1	Pea meal	½
Peanut cake	1	Barley meal	2
Mangels	40	Corn meal	1

The cost of the different feed stuffs used, as given by Mr. Hanken, are as follows:

Mangels.....	per ton..	\$2.40
Meat meal.....	per 100 kilos..	5.50
Corn meal.....	do.....	2.80
Hay.....	do.....	1.30
Linseed cake.....	do.....	3.40

GOOD PROSPECT FOR INCREASED USE.

The possibility for the extended use of cotton meal in the Netherlands is good. It has been suggested that the introduction of cotton meal as a feeding article would have to be undertaken by this Government. It would of course materially aid the introduction, but so long as the Government is friendly to cotton meal there should be no trouble in this direction. There is not to-day a commercial feed

stuff sold in the Netherlands that equals the American cotton meal, and while many illustrated pamphlets, etc., are found advertising the merits of the competitive feed stuffs I have not yet found one line in behalf of cotton meal. It should be remembered by the American shipper that, not being educated to the use of cotton meal, the Dutch feeder will only take the very best grades. He has been led to believe that the least particle of hull in the meal, in place of making the meal better for feeding purposes, is absolutely poisonous to his cattle.

In every province of the Netherlands one will find many clubs of farmers, called by them "bonds," but always referred to in the Government statistics as "societies." These societies usually have a membership from 10 to 50 persons, and their object is the purchase of supplies in large quantities, enabling them to secure the same at wholesale price. The usual method is to advertise in the newspaper and receive bids. In case the purchase is a feed stuff samples are drawn in presence of a representative of the society and the seller, which is sent to the experiment station for analysis, and on the decision rendered the article is accepted or rejected. The farmer receives the bulk of his supplies through these societies, and various statistics are compiled by the Government from data furnished by them. Under this method of purchasing a complaint is therefore not that of an individual, but of an entire community. This plan, which is practically universal in this country, is given in order that the American will understand the channels through which their products reach the consumer.

It has long been publicly advocated in the Netherlands that no meal containing more than 1 per cent lint and 5 per cent hulls should be used, but I think this trouble will, to some extent at least, be eliminated. A visit to one of the agricultural stations discloses the fact that cotton meal fed with mangels is as economical a feed as can be used in this country. Mangels are produced mostly in the southern part of the Netherlands, and by analysis show 2 per cent protein and no fat. It is in this section of the country that cotton meal is now being used, and indications point to quite an extensive use in that section.

DISTRIBUTION—LINSEED CAKES.

The bulk of the feed stuffs used in the Netherlands are carried to the interior by means of small boats. In most instances the boat is the home of the owner and his entire family. On the trip to the interior the owner carries a good assortment of the necessities of farm life. Many of these people dislike to carry cotton meal, and some even refuse to do so, stating that the meal is so finely ground that it scatters over everything in the boat. This can of course be overcome by the use of cake.

The linseed cake of this country is packed in wooden boxes of 50 cakes to the box. Each cake weighs 1 kilo and is about 5 inches wide and 15 inches long. The linseed mill uses the same press for extracting the oil as is now used in the United States, but after grinding the cake (usually mixing an imported linseed cake with it) it is molded into the small cakes and boxed ready for the market.

There is also another feed becoming quite popular, because the form in which it reaches the consumer is attractive. They call it "Lynzaadschilfers," schilfers in Holland meaning scales. It shows 80 per cent digestibility, and the dealers assume that it is only broken linseed cake. From the shape of this broken cake I think it is manufactured in what is commonly known in the United States as the screw press.

PEANUT CAKE—COTTON AND OTHER EDIBLE OILS.

The peanut cake reaches the feeder in the same size as the linseed. But little of this cake is imported. That manufactured by the one peanut mill in this country is of course readily consumed. This mill has a capacity of 100 tons of peanuts every twenty-four hours. It is operated the entire year. The average wages paid is 13 to 16 florins per week. The hull of the peanut is ground, and is supposed to be exported to Germany, where it is used as an adulterant for feed meals. The peanut from Africa is said to be the most productive in oil, and over one-half of the amount received in this country comes from the West Coast of Africa.

Below is given the price of the different feed meals on May 19 in the local currency (1 florin=40.2 cents):

	Protein and fat.	Florins per long ton.		Protein and fat.	Florins per long ton.
	<i>Per cent.</i>			<i>Per cent.</i>	
Cotton meal (bolted)	56	87	Linseed cake (Holland).....	43	88
Cotton meal (not bolted)	55	84	Peanut cake.....	55	92
Linseed meal	40	86	Rape-seed cake	42	60
Linseed cake (imported)	42	84			

The people of the Netherlands are now consuming American cotton oil in large quantities, but under some other name. They get more cotton oil from margarine than through any other source. This industry is one of the largest in the Netherlands, and the profit on cotton oil is greater than on any other article that enters into the manufacture of margarine. I am reliably informed that the use of cotton oil in the manufacture of margarine will not be curtailed until the price reaches some 5 or 6 florins (florin=40.2 cents) per 100 kilos (220 pounds) higher. The manufacturer will then use a larger amount of oleo, peanut, and sesame oils. The English cotton oil is hardly a competitor with the American product, except with the soap manufacturer. During 1906 only 759,000 kilos of English oil reached here against 17,899,000 kilos from America.

The most popular salad oil is the peanut oil manufactured at Delft, but a vast amount of oil is sold here as a strictly pure olive oil from Italy, and I am quite sure that this oil will be found to be manufactured in Rotterdam, or rather blended and mixed at this place. This particular trade is all carried on by a class of merchants here known as "bottlers," and it is very hard to get any details about it.

The principal oil used by the baker is what is termed "patentolie," supposed to be a combination of linseed and rape-seed oil. This is most popular with bakers, but as a rule they use any cheap oil.

COTTON OIL POPULAR.

There is but one trouble to-day with American cotton oil as a salad and cooking oil, namely, the oil is not here. I have interested the largest oil broker in Rotterdam to get a supply of salad and cooking oils from America, and he is greatly encouraged over the outlook for placing it on the market.

During the month of May there was in progress an exhibition of the café, restaurant, and hotel industry. This exhibition is held annually, and is the only thing in the way of a fair or exposition held at Rotterdam. The English, Germans, and French had various articles on exhibition. The margarine manufacturer was there with his stove showing how to cook with his goods, but there was not an American product of any kind to be found. The exhibition was in every way interesting and was largely attended.

In addition to the edible oils manufactured in this country, the following edible oils are imported:

Kind.	1906.	1905.	1904.
	<i>Pounds.</i>	<i>Pounds.</i>	<i>Pounds.</i>
Oleo	122,394,800	114,241,600	103,056,800
Cotton	41,585,000	36,614,400	24,664,000
Rape seed	824,800	1,177,000	2,598,800
Peanut	891,000	1,067,800	1,271,600
Sesame	588,000	154,000	129,800
Olive	499,400	596,200	473,000
All others	376,200	325,600	223,020

The largest part of these oils are absorbed by the margarine manufacturer. The exports of that article is as follows:

Year.	Edible.	Raw.
	<i>Kilos.</i>	<i>Kilos.</i>
1906	54,049,000	28,382,000
1905	51,295,000	24,738,000
1904	46,584,000	25,745,000
1903	43,688,000	.....
1896	42,613,000	.....

The average price for the best quality of edible margarine at Rotterdam was as follows: 1905, 58 guildens per 100 kilos; 1904, 47 guildens per 100 kilos; 1900, 80 guildens per 100 kilos; 1896, 36 guildens per 100 kilos.

In 1906 Great Britain received 49,134,000 kilos of the edible margarine exported, and the remainder was divided about equally between Belgium, Prussia, and Norway. In 1906 Prussia absorbed 23,081,000 kilos of the raw margarine, and the remainder went to Belgium, Great Britain, and Norway.

The Netherlands exports some peanut oil in small quantities to the United States, Belgium, Prussia, and Norway. The amount going to the latter country being for use in the fish industry.

MORE EXTENDED USE—LINTERS.

To extend the use of American cotton oil in the Netherlands it must be as a salad and cooking oil. The margarine manufacturer now uses as much cotton oil in the manufacture of his different grades of margarine as climatic conditions will permit, and so long as cotton oil remains the most profitable ingredient entering into the manufacture of this compound its consumption will not be curtailed. As a salad oil it will find its greatest competitor in the peanut oil manufactured in this country and the small amount of so-called Italian olive oil imported.

The oils as bottled in America are just as attractive as any you will find on this market, and if the peanut-oil manufacturer in this country can send his bottled oil into America I can see no reason why the American manufacturer should not send his original package into this country.

I am glad to advise that a prominent broker has entered into negotiations with American dealers looking forward to opening a store at this place where nothing but American cotton oil will be sold.

There is now in bonded warehouses at this place only 10,000 barrels of cotton oil against a usual stock of 40,000 for the same time of the year. It will take 50,000 barrels for this market before the new crop reaches here.

The Netherlands is not a large cotton manufacturing country, and the American linter has found but little use here. Some of the best grades are used in manufacturing bed covering. In the manufacture of the mattress kapok is extensively used. The imports of kapok in 1906 were 56,137 bales, and the average price 32 cents (Dutch) per pound (Dutch); and in 1905, 58,485 bales, the average price of which was about that of the preceding year. The price at this time (May 20) is 16 cents per pound.

IMPORTANCE OF THE MARKET.

GROWING DEMAND AT ROTTERDAM—BUSINESS HELPED BY DUTCH OWNERSHIP OF MARGARINE FACTORIES.

Special Agent A. G. Perkins, writing from Rotterdam, January 20, 1908, supplies the following additional facts concerning the trade in oil-seed products in Holland:

Dutch ownership of the principal margarine factories of northern Europe has made Rotterdam the largest market for that article, as well as for the raw materials. During the past few years a number of the smaller plants in Holland, Belgium, and Germany have been bought up by Dutch capital, some of which have been closed down, and even dismantled where the manufacturing costs can not be minimized. The local business is steadily increasing, notwithstanding reports of the unsatisfactory financial results, caused by high prices of the raw materials and keen competition among the manufacturers,

although the volume of the Netherlands' exports, according to Government statistics, has been decreasing, as is shown in the following statement:

Exports.	1906.	1906.	11 months 1907.
	Tons.	Tons.	Tons.
Edible margarine.....	51,349	51,009	51,118
Raw margarine.....	24,802	28,583	24,867
Total.....	76,151	82,631	58,985

About 90 per cent of the edible margarine goes to Great Britain and about 80 per cent of the raw margarine goes to Germany.

INCREASE IN COTTON-SEED OIL PURCHASES.

One of the largest importers of cotton-seed oil in Rotterdam told me recently that the margarine manufacturers were buying very little cotton-seed oil at present, claiming that the price of the oil is too high as compared with the price of the finished product; in fact, that the lower grades of margarine can not be manufactured at a profit now.

The soap makers of Holland, Germany, and Belgium also patronize this market very liberally in the purchase of materials, especially cotton-seed oil, though for this business, except with a few manufacturers, it is more a matter of price than anything else. The trade, however, in soap oils has dropped off in the last few weeks to almost nothing, as other oils are selling at much lower prices. For instance, cotton-seed oil for soap purposes is quoted at 32 guilders (\$12.86) per 100 kilos (2204 pounds) in barrels, as against 23 guilders (\$9.25) per 100 kilos (2204 pounds) for linseed oil loose at the mills.

Olive, peanut, and sesame oil are sold in nearly all retail grocery stores in bottles; also other oils called table oil and salad oil, which are known to be mixed oils, though the ingredients are not stated. These oils are bought by the retailer in tins and barrels from middlemen (dealers and mixers) and bottled at the stores, and I doubt if the consumer knows what he is getting unless he is a good judge of oils. I went into a store to buy a small bottle of salad oil and was offered a bottle with "sesame oil" on the label and "olive oil" on the seal. These oils sell at retail for 50 to 75 Dutch cents per pint (100 Dutch cents = 1 florin = 40.2 cents American).

For cooking cotton-seed oil is sold in good quantities to the bakers, who also buy from the middlemen in rather small quantities. The bread made here has very little grease of any kind in it, and pastries are not made in any quantities.

The cotton-seed oil business between America and Holland is done altogether through local agents, brokers, and representatives, and under standard brands, the quality of which is well known to the trade. I have learned from several sources that one of the favorite brands has recently deteriorated very much, which has hurt the business to some extent. In the last few years a neutral oil has come into favor with the trade here on account of the improved formula for margarine, though "prime summer yellow" and other grades are of course readily sold.

OIL IMPORTS AND EXPORTS—STOCK IN WAREHOUSES.

In the last ten years the sales of cotton-seed oil through this market have increased more than any other oil, and this increase has been steady. Below I submit the Government (Netherlands) statistics of total imports of oils into Holland for the year 1897 and for the first eleven months in 1907, including the in transit:

Cotton and other oils.	1897.	First 11 months 1907.
	Metric tons.	Metric tons.
Cotton-seed oil.....	31,407	61,567
Peanut oil.....	1,975	1,439
Sesame and other oils.....	7,806	16,500

The following statement shows the imports of oils into the Netherlands for consumption during the eleven months ended November 30, 1907:

Whence imported.	Cottonseed.	Palm.	Oleo.	Cocoanut.	Other.
	Metric tons.	Metric tons.	Metric tons.	Metric tons.	Metric tons.
United States.....	16,975		35,773		
Belgium.....	176		1,358		1,811
France.....	62				406
United Kingdom.....	1,457	13,567	1,482	1,029	27
West Africa.....		1,065			396
Other countries.....	123	6,801	461	5,423	29
Total.....	18,763	20,998	39,044	6,452	2,640

The total imports of oils for home consumption during the first eleven months of 1906 were as follows: Olive, 204 metric tons; peanut, 324; cotton-seed, 16,768; rape, 1,260; sesame, 241; palm, 24,249; cocoanut, 7,228; oleo, 53,051; and all other, 298. The total exports of these oils during the first eleven months of 1907 amounted to 63,317 metric tons, of which 23,051 tons were oleo oil. The stocks of oils in warehouses were:

	Cottonseed.	Peanut.	Other.
	Barrels.	Barrels.	Barrels.
On hand Nov. 30, 1907.....	14,419	294	2
Stored during December, 1907.....	3,787		
Total.....	18,206	294	2
Delivered during December, 1907.....	7,171	159	1
On hand Dec. 31, 1907.....	11,035	138	1
On hand Dec. 31, 1906.....	4,671		

A LARGE QUANTITY OFTEN STORED.

The receipts of cotton-seed oil at Rotterdam during December were 18,200 barrels. While the stocks of oil are greater this year than the same time last year, yet it is not uncommon to find stocks of 50,000 to 60,000 barrels in the bonded warehouses aside from the stocks in

the warehouses of consumers. How much of this oil is in first hands can not be ascertained. At times importers accumulate stocks in the warehouses, but more often the consumers will have large supplies stored, as the expense is not heavy and they are able to secure advances from the banks on the warrants issued by the bonded warehouses. Then, too, they do not have to pay the customs duty until the oil is taken out.

I have been through two of the large warehouses of the Blaauw-hoedenveem Company, Limited, and saw probably 2,500 barrels of cotton-seed oil stored in their cellars, and was glad to note the good condition of the packages and the manner of storing. The buildings are very substantial, of brick with reinforced concrete floors, and communications from each compartment are through outside passages. The usual charge for storage and insurance of cotton-seed oil in barrels is 7 cents (Dutch money) per 100 kilos (2,204 pounds) per month, though I am told better arrangements can be made on large lots. Receiving and delivering is of course charged extra.

One of the bankers here told me he thought it might be desirable for some of the American shippers to store their products here and borrow money in Holland, which he said could be done cheaper at this particular time than in America. In fact, he said, shippers of other products were doing this now.

TRADE IN OIL-PRODUCING SEEDS—OIL MEAL AND CAKE MARKET.

The imports of oil-producing seeds, nuts, and kernels into Holland during the first eleven months of 1907 amounted to 360,969 metric tons. Of this amount Dutch East Indies furnished 42,643 tons of copra; West Africa 22,105 tons of peanuts and 10,210 tons of palm kernels; Belgium 8,715 tons of rape seed and 41,762 tons of linseed; Hamburg 1,201 tons of peanuts and 22,528 tons of palm kernels; Germany 5,172 tons of rape seed; United States 16,257 tons of linseed; British India 11,378 tons of linseed, and Argentina 155,032 tons of linseed. The imports during the same period of 1906 were: Peanuts, 25,816 tons; palm kernels, 21,878 tons; rape seed, 4,342 bushels, and linseed, 9,002 bushels. There was no record of the copra received. The total exports of oil-producing seeds during the first eleven months of 1906 amounted to 169,430 metric tons, of which linseed amounted to 81,914 tons, copra 37,828 tons, palm kernels 32,255 tons, peanuts 8,963 tons, and rape seed 5,470 tons. Seventy-five per cent of the exports of oil-producing seeds, etc., go to Germany.

The imports of oil cake and meal into Holland during the eleven months ended November 30, 1907, were:

Whence imported.	Linseed.	Rape.	Peanut.	Cotton seed.	Other.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
United States.....	154,363	—	25,171	—	7,425
Belgium.....	10,014	602	116	871	875
Germany.....	41,248	3,245	348	949	755
Other countries.....	16,745	15	73	551	2,096
Total.....	222,370	4,252	537	27,569	11,201

The exports of oil cake and meal for the calendar year 1906 were as follows:

Whither exported.	Linseed.	Rape.	Peanut.	Cotton seed.	Other.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Belgium.....	1,450	151	682	—	3,39
United Kingdom.....	337	—	1,500	—	304
Hamburg.....	432	—	1,090	—	504
Germany.....	27,382	1,022	1,059	23,685	5,976
Other countries.....	29	60	250	580	—
Total.....	29,670	1,233	4,521	24,553	6,984

WHY LINSEED CAKE IS PREFERRED.

As will be seen from the foregoing figures, cotton-seed cake and meal is very little used in Holland, though this is a large market for foodstuffs. Linseed cake, both domestic and imported, is used almost exclusively. The cattle here are usually taken off the pastures and put in the stables about the middle of October to November 1 and stalled until April. One trouble with cotton-seed meal is that it rarely reaches this market before December. As the farmers begin buying their foodstuff in October they are forced to begin feeding on other products, and it is much more difficult to introduce an article in the middle of the season than at the beginning. Furthermore, the farmers have to go to the large centers in boats for their supplies, and therefore they nearly always lay in a supply before cold weather sets in and the canals freeze, as the expense of shipping by rail is three or four times as great as by water. There is a small stock of cotton-seed meal in Rotterdam at this time which was sold for December shipment, but as it did not reach this market until after the canals froze it is still on hand.

The demand here, while very limited, often exceeds the supply. I saw a few days ago a letter from one of the farmers' societies requesting offers of double ground cotton-seed meal (bolted) containing 48 per cent protein and 10 per cent fat. This request could not be complied with, as there is none here unsold. One of the largest dealers told me he had made efforts to buy bolted meal from America but could get none offered.

Texas bolted meal with 55 per cent to 58 per cent protein and fat is the best seller, though "valley prime" can, of course, be sold at lower prices, but it is important that it should be finely ground. Texas bolted meal sells for about \$1 per long ton more than Texas prime.

The market quotations for oil cakes per metric ton are as follows: Linseed cake, Holland manufacture, \$5.62; linseed cake, American prime western and American fancy, \$3.68 and \$3.88, respectively; coconut cake, \$3.21; and cotton-seed meal, Texas bolted, \$3.52.

While the Holland market is being worked more vigorously than others I have visited, I think the business could be materially increased if shipments were made from America earlier in the season. I understand also that other oil cakes have been introduced among the farmers by distributing small quantities for trial, but I have not

yet heard of any cotton-seed meal being given away. If the American manufacturer would adopt some plan of this sort he would almost immediately create a much larger market for his product, and in a short time would be able to get a fairer price for the best feed.

COMPLAINTS AGAINST AMERICAN MEAL.

TRADE INJURED BY CARELESS HANDLING OF PRODUCT ON SHIPBOARD.

Writing from Amsterdam, May 22, 1907, Special Agent Benton reports that there is complaint in relation to the condition in which cotton meal arrives from the United States, and relates his experience in the discharge of a cargo of meal at Rotterdam. His report follows:

There has been considerable complaint about the condition in which American meal reaches this country. Learning that the steamship Lord Ormonde was expected to arrive at Rotterdam about May 20, I determined to witness the discharge of the vessel. She arrived May 21, and on the 22d I was present during the discharge of cargo, from 8 a. m. until 6 p. m., in which time 2,500 tons of cotton meal were discharged, of which only 200 tons was for Holland, the remainder being destined for points along the Rhine. The American manufacturer would not recognize his meal when placed in the warehouse on this side. But after a careful investigation I do not see that the manufacturer can assist much. The bag should be better sewn, especially for export meal. It should be sewn twice, especially if the average size cotton thread is used. About 20 per cent of the bags are open at the end, and by the time they reach the warehouse 40 per cent of the meal is scattered. The worst damage is from torn bags, but this is not the fault of the manufacturer. Those having charge of loading and unloading the vessel are responsible for the torn bags.

DISCRIMINATION AGAINST COTTON MEAL.

The captain of the boat of course claimed that the bags containing the meal were not good, but flour taken from the same vessel was placed in the warehouse, making an unusually neat appearance. The bag containing the flour was about the same as that containing the meal. The rate of freight on the flour was about the same as the rate on the meal. In hoisting the flour from the hold two very wide canvas bands were used; in hoisting the meal, one large rope. I was told by the officials of the boat that flour was valuable and had to be handled carefully in order to keep the bags from tearing. They did not seem to realize that American cotton meal was worth nearly as much per ton as flour. In one end of the boat and on top of the meal was a considerable amount of cotton oil in barrels. Many of these barrels had been broken from bad handling and the meal underneath was ruined. It was contrary to the rules of the company to place flour near the oil, but it made no difference with cotton meal. The 150-pound bag of meal seemed to be in better shape than the 100-pound bag.

VARIETY OF BRANDS.

In this lot of meal was found about 75 different brands, and of course many different grades. The warehouse was used to get the different marks together. The badly torn bags could not be identified, and it made no difference to which pile they were allotted. The wasted meal was bagged and placed on almost any pile that seemed to be short. Every brand was gotten together as well as could be done. The meal was then sampled, and as carried from the warehouse to the railroad car or small barge for transportation to the interior was weighed. The sampling and weighing was in every way satisfactory. I had weighed many bags that had not been torn, and in every instance they weighed out properly, in most cases gaining about 1 pound each. It was loaded immediately into the car or barge and none of the torn bags fixed. The reclamation for loss in weight may of course be small, but it should not exist at all under proper handling.

The grade of meal that left the interior mill is of course different from the grade actually delivered. It can not be otherwise, because the resacked meal is allotted to the pile that is deficient in weight. The condition in which this meal arrives prevents the possibility of getting the different brands together. The meal is loaded into the vessel without regard to marks, and in case of damage from oil, as in this instance, about enough meal of each mark is damaged sufficient to make a reclamation probable. In this connection I find that the barrel of oil shipped from a southern port does not reach here in as attractive and neat shape as the barrel shipped from the northern port. Climatic conditions may possibly have something to do with the oil, but that does not cover it entirely.

The trouble is in the loading, the position placed in the vessel, and in unloading. Cotton meal should not pay the same rate of freight as flour, unless like care is given in handling. This matter should be looked into thoroughly by the different associations of mill men in the United States, and, if possible, more firms induced to enter into the exporting of cotton meal. With more people engaged in exporting, better service would result.

WORK AT EXPERIMENT STATIONS.

Hoorn is the location of one of the experiment stations. Dr. K. H. M. van der Zande is the director of this station, and has been antagonistic to cotton meal. The trade seems to have had considerable trouble with Dr. van der Zande on cotton meal, and few samples could pass him without a very severe reclamation and much dissatisfaction among the trade. Before going to Hoorn I visited Goes, the location of the main laboratory, and ascertained that of the many tests on cotton meal they had never been able to find anything wrong. In that province the farmers had begun the use of cotton meal. Securing letters from Dr. Mansholdt, assistant director-general of the Department of Agriculture, I called on Dr. van der Zande, whose antagonism to cotton meal was largely owing to his experience with American corn. He did not know that American cotton seed, when sold by the farmer, had more or less lint on the seed, and that in the manufacture of cotton meal more or less lint and hulls would be in the meal. It was new to him that the hull, which forms

about 40 per cent of the manufacture of cotton products, are all consumed in the southern sections of the United States as a substitute for hay in feeding cattle. When he realized that the small per cent of lint and hulls in the meal was not a foreign substance he took a more friendly interest in cotton meal. His feeding tests with cotton meal had all proven very satisfactory, especially when used with mangels, which is a species of beet grown in this country, and by analysis shows only 2 per cent protein and no fat. It is used in feeding as a substitute for hay. The native hay shows from analysis 12 per cent protein and 2 per cent fat. I induced Dr. van der Zande to make a test of cotton meal that contained a large per cent of lint and hulls—the trade at Rotterdam consenting to furnish the meal gratis. With this trouble eliminated, I am quite sure that the dealers here will take a greater interest in cotton meal.

An importer, whose name is herewith furnished, is anxious to get in communication with American manufacturers of cotton meal. He has in the past imported some meal, but his American connections being far from satisfactory, and the antagonism to meal from the Hoorn station being so severe, he went out of the business. If suitable connections can be secured, and he prefers to deal direct with the manufacturer, he will gladly do a considerable amount of advertising of cotton meal and try to build up a trade.

I found at Rotterdam the peanut mills doing some business with Norway and Sweden in peanut and sesame oils for the fish industries. I also learned from a conference with the European representative of one of the large American companies that their business in oil for Norway and Sweden had doubled in the last year, and that the main competitor of cotton oil in those countries was an adulterated olive oil. I inclose a list of brokers and importers of oils and cake at Rotterdam. While these parties seem to have American connections, it is probable manufacturers may extend their European direct sales, or make changes that may prove advantageous, by communicating with these Rotterdam concerns.

[NOTE.—Names furnished by Mr. Benton are on file with the Bureau of Manufactures and are at the disposal of those engaged in the cotton-seed industry.]

PREJUDICE AGAINST COTTON CAKE.

DECREASE SHOWN IN IMPORTATIONS FROM THE UNITED STATES.

From the result of the investigation made by Consul Henry H. Morgan, of Amsterdam, in reference to cotton-seed oil, which is imported into Holland in great quantities and almost exclusively from the United States, he is of opinion that there is but little room for improvement in the import, except in a small way for salad and table oils. The consuls report, dated January 24, 1908, continues:

Practically all the oil which comes into the country from the United States arrives at Rotterdam, which receives more than any other port of Europe; 75 per cent is edible oil and 25 per cent is used in the manufacture of soap. According to official statistics the stock of oils in bonded warehouses at the end of the calendar year was

11,035 barrels of cotton-seed oil, 138 barrels of peanut oil, and 1 barrel of sesame oil. The prices per 220 pounds to-day are as follows:

Cotton-seed:	
Choice butter.....	\$13.67
Prime summer yellow.....	13.37
Soap oil.....	12.86
Rape oil.....	15.68
Cocanut oil.....	16.08
Palm oil.....	13.67
Linseed oil.....	9.25

The import of cotton-seed cake and meal, which is brought into the country almost exclusively from the United States, according to official statistics, has decreased from 34,212 tons in 1905 to 27,595 tons during the first eleven months of the past calendar year. It fell into disfavor among the farmers of the country as a food for cattle, as they claimed that many of their cattle died from eating it on account of the lint which it contained.

If this prejudice can be eliminated I believe a much larger market will be found here for this product, for it is admittedly more nutritious than any other food given to cattle. While linseed cake is known not to be as nutritious as cotton-seed cake, it is used almost exclusively by the farmers for the reason given, and while this cake is largely manufactured in Holland, about 50,000 acres being planted with flax for linseed, the United States shipped to Holland about 220,000 tons of this article during 1907.

BELGIUM.

TRADE IN SEED PRODUCTS.

COMPETITION OF COTTON SEED WITH OTHER ARTICLES—SUGGESTIONS FOR EXTENSION OF AMERICAN TRADE.

Special Agent A. G. Perkins, writing from Brussels, December 26, 1907, furnishes the following review of the trade in vegetable-seed products in Belgium:

Antwerp, aside from being the largest port in Belgium, is one of the most important on the Continent, and by some is considered the largest distributing port in northern Europe. Being in close touch with southern Germany, Holland, Switzerland, and parts of France, with very reasonable freight rates by many canals and rivers, it offers exceptional opportunities to American manufacturers as a market for their products, and especially cotton-seed products.

The total value of imports into Belgium for the year ended December 31, 1906, is given at \$666,625,311, and well-informed people tell me that Antwerp handled over 80 per cent of this total. The total exports for the same period is placed at \$539,211,152. All this with a population of 7,165,222 and an area of 2,945,589 hectares (hectare=2.471 acres).

Cotton-seed products constitute a very small proportion of the quantities. All oil cakes are entered under one head, and there is no way to determine exactly the quantity of each kind, though from reliable private sources I understand that not over 30,000 tons of cotton-seed cake came through Antwerp during the year 1906, and practically all of this came from the United States. Three thousand

tons of the cake reported as coming from the United States were shipped from Mexico, via Galveston, as cheaper freight rates were obtained through Galveston than a Mexican port, and the sailings are more regular. Of this 30,000 tons of cotton-seed cake, fully 15,000 tons go to points along the Rhine in Germany.

COMPARATIVE STATISTICS OF CAKE IMPORTS.

The total Belgian imports of oil cakes in 1904 amounted to 202,041 metric tons, of which the United States furnished 113,915 tons, these amounts advancing respectively to 203,306 and 118,448 tons in 1905. The exports in 1904 amounted to 68,028 and in 1905 to 73,484 tons. The oil-cake trade in 1906 and the first eleven months of 1907 figured as follows:

Countries.	1906.	11 months, 1907.	Countries.	1906.	11 months, 1907.
	<i>Metric tons.</i>	<i>Metric tons.</i>		<i>Metric tons.</i>	<i>Metric tons.</i>
United States.....	102,392	111,464	British India.....	3,807	3,143
Russia.....	24,547	17,311	Spain.....	1,751	2,311
France.....	11,569	19,899	Germany.....	1,492	1,869
Great Britain.....	9,129	6,790	All other.....	4,347	5,908
Netherlands.....	3,339	10,868			
Canada.....	8,845	5,368	Total.....	231,428	175,861

No statistics can be obtained for cotton-seed meal, but private estimates place the imports of this product at 15,000 to 20,000 tons; part of which also goes to Germany. Linseed cake is the strongest competitor of cotton-seed cake and meal in this country, though many other cakes are manufactured by the two hundred and odd oil mills in Belgium. These mills are small, as compared with American mills, some of them crushing only 5 or 6 tons per week, though there are about 30 mills with a crushing capacity of 400 to 500 tons per week. The small mills only run when there is a margin of profit in crushing, which is not the case all the time. Flax is also cultivated in Belgium, but almost altogether for the fiber. The seasons for flax growing are so changeable that the crop of seed varies from 5,000 to 12,000 tons per year.

OIL SEED IMPORTS.

The imports into and exports from Belgium of oil seeds for the year 1906, and for the first eleven months of 1907, together with the amount imported from the leading countries, are shown in the subjoined statement, the quantities being given in metric tons:

Oil seeds.	Total imports.		Leading source of imports.				Total reports.	
	1906.	First 11 months, 1907.	Country.	1906.	First 11 months, 1907.		1906.	First 11 months, 1907.
	<i>Metric tons.</i>	<i>Metric tons.</i>		<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Cocoanuts.....	23,812	23,456	Netherlands.....	15,538	13,895	3,100	4,853	
Colza.....	57,187	36,605	British India.....	38,123	80,542	45,115	62,344	
Cotton.....	1,916	243	United States.....	918	997	61		
Linseed.....	156,878	190,144	British India.....	153	153			
Palm.....	2,083	979	Argentina.....	69,738	127,748	98,190	97,761	
			Hamburg.....	659		437	38	
Peanuts.....	8,548	8,895	Netherlands.....	5,537	516			
Rape and poppy.....	20,387	27,789	French Africa.....	5,776		2,869	4,961	
Sesame.....	2,152	1,169	British India.....	12,972	26,838	14,005	21,009	
	44,341	51,176	Romania.....	815	630	718	276	
			British India.....	35,210	46,194	29,483	42,101	

Of the total imports of linseed, the United States supplied 21,827 tons in 1906, and 5,759 tons during the first eleven months of 1907. The United States also furnished during the first eleven months of 1907, 49 tons of cotton seed.

A very good idea of the supplies needed of the various oil cakes for feeding and other purposes may be gained from the amount of live stock in the country, which is estimated as follows: Cattle, 1,420,978, of which 754,093 are milch cows; sheep, 235,722; hogs, 1,163,133; and horses, 487,456. As a foodstuff for cattle there has been a prejudice against cotton-seed cake and meal in Belgium for several years. A merchant in Antwerp who handled cotton-seed meal in large quantities twelve and thirteen years ago told me that the farmers claimed at that time that the fiber or lint in the meal lodged in the throats of the cows, causing sickness; and others said the meal made the milk so rich the cows would not last long as milch cows. It was evident from his description of the manner of feeding that they fed too much. Thus the prejudice originated, and, so far as I can learn, no very great effort has since been made by the American manufacturer to remove this prejudice, and the Belgian importers and dealers, finding cotton-seed cake and meal in very little demand and hard to sell in any quantities in competition with other oil cakes, have paid very little or no attention to the business, preferring to devote their time and attention to other and more salable goods.

CONSERVATIVE FARMERS—CONSUMPTION OF FEED.

The Belgian farmers are an intelligent class, yet they are slow to invest their money in an article which has had such a reputation for so long a time, and it is only by an ocular demonstration they will be convinced of the value of cotton-seed meal as a feed for their stock. A dealer in Antwerp tried recently to buy a small quantity of cotton-seed meal to send to his father's farm for trial, but could not find a single sack in the market. I do not want to create the impression that cotton-seed meal is unknown, for it is used in some sections in a small way, and in other sections the dealers mix it with other feed-stuffs and sell it to the small farmers as a mixed feed in sacks marked with the guaranteed analysis, though the ingredients are not known to the consumer.

The amount of commercial feed consumed by cattle in Belgium during the years 1905 and 1906, in quintals of 220.46 pounds, and the average annual consumption per head for these two years, in kilos of 2.2046 pounds, the statistics being obtained from the minister of agriculture at Brussels, was as follows:

Description.	Total consumption.		Average per head.	
	1905.	1906.	1905.	1906.
	<i>Quintals.</i>	<i>Quintals.</i>	<i>Kilos.</i>	<i>Kilos.</i>
Corn and corn meal.....	105,789	128,245	8.91	7.21
Barley.....	735,835	947,043	41.18	53.21
Cotton-seed cake and meal.....	146,939	144,377	8.22	8.11
Linseed cake and meal.....	1,977,715	1,977,014	110.59	112.21
Other oil cake and meal.....	296,457	283,418	16.52	15.93
Neat, etc., ground.....	4,742	4,911	.27	.28
Refuse from breweries, etc.....	4,271,669	4,439,374	238.86	249.48
Pulp of sugar beets.....	18,418,379	11,650,528	694.41	654.64
All other.....	2,799,616	2,797,964	153.30	156.65

In order to create a demand for cotton-seed products in Belgium the American manufacturers should adopt a more progressive policy than has been pursued in the past. Merely offering the goods for sale will not do under the circumstances. One of the importers in Antwerp told me that he could handle a great deal more cotton-seed meal if American manufacturers would reduce the price; he could then sell the meal in markets where there is already a demand, and thus compete with others in that market.

SUGGESTED TRADE CAMPAIGN.

I would suggest that a supply of cotton-seed meal and cake be sent to some distributing point, like Antwerp, and placed in the hands of a reliable dealer, and that traveling salesmen be employed to visit the different cooperative dairies (there are 484 of these in Belgium, to say nothing of those in southern Germany and other sections) and large cattle owners, with attractive pamphlets printed in the different languages, explaining fully the merits and uses of cotton-seed products both as foodstuff and fertilizer. However, all the literature that could be sent over here would do no good if the goods advertised can not be found in the principal markets.

Several dealers have said the solicitation suggested would be the best way to get the goods established, and as these salesmen would sell at retail prices the expense would be practically nothing, and certainly the best results would be obtained, for when a demand is created other dealers would want to buy. One firm told me they would undertake to handle the business in this way for a commission of 1 per cent and the salaries and expenses of two traveling salesmen, which he said would be sufficient to cover Belgium, Holland, the southern part of Germany, and Switzerland. Good men could be employed for about \$5 per day, covering salaries and expenses. This is only a suggestion, but certainly if the American manufacturers take the matter up and push it vigorously good results will be obtained.

THE PREFERABLE SIZE BAGS.

The packages most desired here are the 165-pound bags, as they are used again by farmers in shipping potatoes, turnips, and other farm products. Meal in these bags often sells readily at 12½ to 15 centimes more per 200 pounds than the 100-pound bags, while the 100-pound bags are hard to sell at the reduced price.

Marking bags containing cotton-seed meal is of great importance to both buyer and seller, as that is the only way to prevent mixing of lots, which always means mixing of grades and causes much dissatisfaction. I saw a steamer unloading meal from Galveston. There were several marks, but many of the bags had the marks entirely obliterated by the sifting of meal through holes. Such bags were distributed among the lots according to the number required. Perhaps if the letters used in the marks were 8 or 10 inches long instead of 3 or 4 inches, they might stand the rough handling better; or a strong tag, securely fastened either by wire or on the sewing twine after two or three stitches are taken, might be

better. In the case of mixed lots some one always suffers, and in nearly every case a claim is made against the shipper of the best meal.

Nearly all of the dealers here prefer standard brands. About 60 per cent of the meal coming to this market is from Texas, the largest part of which is "bolted," which is another evidence of the feeder's dislike for the lint or fiber.

USE OF FERTILIZERS.

Of the total area of 2,945,589 hectares (1 hectare=2.471 acres), 2,607,514 hectares are devoted to agriculture, and on account of the dense population it is absolutely necessary for the farmer to get everything possible out of his land, consequently fertilizers are used very largely. Even the pastures are fertilized and cultivated. Below are the amounts used and the various kinds, the total quantities being given in quintals of 220.46 pounds, and the quantities per 100 hectares in kilos of 2.2046 pounds:

Description.	Total quantity.	Quantity per 100 hectares.	Description.	Total quantity.	Quantity per 100 hectares.
	Quintals.	Kilos.		Quintals.	Kilos.
Lime and cinders of lime.....	1,019,310	5,571	Superphosphate	1,139,671	6,741
Refuse of sugar refineries.....	1,078,727	6,056	Basic phosphate	269,470	5,430
Earth.....	223,063	1,320	Mineral phosphate	11,283	64
Plaster.....	6,763	38	Chloride of potassium	46,799	265
Nitrate of soda.....	802,899	4,546	Sulphate of potassium	20,339	115
Sulphate of ammonia.....	154,191	873	Kainit.....	296,275	1,677
Ground bones, meal, horns, and leather.....	19,530	111	Oil cake.....	132,790	732
Refuse of wool.....	97,512	552	Other special preparations.....	751,682	4,266
Guanos.....	246,458	1,356			

COTTON-SEED OIL AND OTHER FATS.

Nearly all of the cotton-seed oil brought direct through the port of Antwerp is of summer yellow grade for soap makers. There are 266 soap factories in Belgium. Only a few of the soap makers use cotton-seed oil during the winter, as the majority of them have no formula for preventing the opaque color caused by cold weather, and those who can prevent this are very secretive about their process. Many of the factories in southern Germany (supplied through Antwerp) are using cotton-seed oil to make a silvery white soft soap. For making all kinds of soap cotton-seed oil is preferred to most other oils, though for the past season the consumers say the price has been relatively too high. Cotton-seed oil produces less soap by about 10 per cent than other oils, yet the quality is said to be superior. The other oils competing with cotton-seed oil are corn, linseed, and palm oils, which were imported during 1906 in about equal quantities. The supply of the other oils imported and manufactured in Belgium is not sufficient to be considered seriously.

The margarine factories in Belgium are mostly owned either in part or wholly by Dutch people, and almost all of the prime cotton-seed oil used by them for margarine is bought in Holland, where I am told there is always a good stock of standard grades. These manufacturers prefer to buy in Holland for two reasons—i. e., quick

delivery of goods, which makes it unnecessary to place orders far ahead, and quick settlement of differences.

For cooking purposes little or no oil is used in its natural state; butter, margarine, lard, and lard compound are altogether used for cooking. For the years 1905, 1906, and for the first eleven months of 1907 the following greases were imported:

Articles.	1905.	1906.	11 months 1907.
Butter, fresh and salted.....	Kilos. 4,360,863	Kilos. 5,047,813	Kilos. 5,231,281
Margarine.....	822	822	45
Lard.....	14,062,294	13,737,230	11,338,314
Other animal fats.....	23,255,096	25,442,839	28,219,354

On butter and margarine there is a duty of \$2.86 per 220.4 pounds. Lard and other animal greases are admitted free.

The imports and exports of vegetable oils, by countries, for the year 1906 and for the first 11 months in 1907 are given below. More colza, coconut, sesame, and peanut oils are exported than imported, which is accounted for by the imports of the raw materials.

Vegetable oils.	Total imports.		Leading source of imports.				Total exports.	
	1906.	First 11 mos. 1907.	Country.	1906.	First 11 mos. 1907.		1906.	First 11 mos. 1907.
	Metric tons	Metric tons		Metric tons	Metric tons		Metric tons	Metric tons
Cocoanut.....	1,732	1,342	British India.....	611	765		4,462	4,099
Colza.....	1,815	1,633	United Kingdom.....				4,856	2,964
Corn.....	9,329	2,588	United States.....	9,124	1,924		1,731	1,821
Cotton.....	9,837	8,535	United Kingdom.....	4,394	3,516		4,367	4,385
Linseed.....	9,307	11,848	Netherlands.....	4,882	8,030		8,222	4,191
Olive.....	1,938	1,645	France.....	1,578	1,317		659	203
Palm.....	7,916	6,530	United Kingdom.....	5,362	6,277		928	1,537
Peanut.....	609	484	Netherlands.....	410	267		974	571
Rape and poppy.....	1,061	941	France.....	1,056	941		27	1,065
Sesame.....	936	585	Netherlands.....	487			812	1,095
			France.....		494			

Price quotations on December 31, 1907, c. i. f., Antwerp were as follows:

	Francs per 100 kilos.	Per gallon.
Off summer cotton-seed oil:		
American.....	60	\$0.394
English.....	54.5	.387
Linseed oil:		
In barrels.....	52.5	.345
Loose at mill.....	49.5	.325
Corn oil.....	56	.368
Palm oil.....	70	.459
Colza oil.....	83.5	.548
Cocoanut oil.....	70	.450
Cotton-seed meal:		Per long ton.
New Orleans.....	17.875	\$38.05
Texas.....	18.375	36.03
Bolton.....	18.75	35.57
Cotton-seed cake.....	17.375	34.07
Linseed cake.....	18.875	37.01
Cocoanut cake.....	18.50	38.24

There could easily be a far better understanding between the American manufacturer and European buyer, for in nearly every case of mixed shipments where a claim arises for short weight or

deficiency in quality there seems a lurking suspicion on the part of the buyer that the shipper is at fault. One firm of importers told me they would like to be invited to become a member of the Inter-State Cotton Seed Crushers' Association, and to attend their conventions, and that he felt that many others would also like the same privilege.

There are several firms in Antwerp who would like to correspond with American manufacturers with the view to forming business connections [names on file in the Bureau of Manufactures].

DECREASED SUPPLY OF COTTON SEED AND COMPETING PRODUCTS.

Special Agent Perkins, writing from Antwerp, December 10, briefly reports regarding quantities of cotton-seed oil, cake, and meal and competing products on hand on the date named.

I have made careful inquiry as to stocks on hand at Antwerp, and while exact figures can not be given, from the best information obtainable the following may be accepted as approximately correct (1 kilo = 2.2 pounds; 1 metric ton = 2,204 pounds):

Articles.	Amount.	Articles.	Amount.
Cotton-seed oil.....	Kilos. 60,000	Cotton-seed cake and meal.....	Metric tons. 1,000
Rape-seed oil.....	250,000	Linseed cake.....	9,000
Sesame oil.....	25,000	Cocoanut cake.....	5,000
		Linseed.....	5,000

The arrivals of cotton-seed cake at Antwerp since October 1 aggregated 18,930 sacks, the estimated weight of which is 1,135,800 kilos.

For the past twelve or eighteen months the stocks of oil in this market have not been large, but I am informed that on account of the low prices of cotton-seed oil the stocks of other competing oils are likely to increase from this time forward, as cotton-seed oil is preferred by soap makers when prices are on a parity. The stocks of linseed in Belgium are estimated by reliable firms at Antwerp to be between 150,000 and 175,000 metric tons.

BRUSSELS.

PREJUDICE AGAINST COTTON MEAL—COTTON OIL AND CAKE.

Gregory Phelan, vice and deputy consul-general at Brussels, reports as follows under date of May 27, 1907:

A small amount of cotton-seed cakes is annually used by Belgian farmers, principally as feed for sheep. The farmers do not esteem it as a valuable food for stock, asserting that in general it disagrees with their animals. Inexperience in the use of this food, coupled with existing traditions, doubtless operates against its popularity and use in this country. There are no statistics showing the annual aggregate quantity and value of the sale of cotton-seed cakes in this consular district. Cotton-seed linters seem unknown on this market.

Cotton-seed oil and cotton-seed cakes are imported into this country and put to various uses. There are no statistics showing the amount in gallons and pounds annually consumed in Belgium. Cotton-seed oil of good quality comes into competition with peanut and sesame oils in the manufacture of margarine, and is employed in mixing with olive oil. Prime summer yellow, previously exclusively used in the manufacture of margarine, is frequently replaced by peanut oil and sesame oil, and is also imported from the United States. The market value of these last two oils is respectively from \$14.47 to \$19.30 per 100 kilos (220 pounds) and \$12.54 to \$17.37 per 100 kilos. Prime summer yellow of extra quality is also used in mixing with olive oil and occasionally used in its pure state as a table oil for salads, etc. It is difficult to ascertain the amount consumed in this country, as many firms buy through agents in other countries. Off summer yellow is extensively used for industrial purposes when quotations are not too high. This oil could be sold in large quantities in Belgium if offered at reasonable prices.

Corn oil, imported from the United States and used in soap making, comes into competition with cotton-seed oil, but of late this importation, from some unknown cause, has decreased to almost nothing.

SOURCES OF SUPPLY.

The following table shows the amount of importations of the olive, cotton-seed, and corn oils for domestic consumption, and the countries from which each was imported during the year 1906:

Country.	Olive oil.	Cotton-seed oil.	Corn oil.
	Pounds.	Pounds.	Pounds.
United States.....	35,682	6,457,884	20,024,972
England.....	3,214,658	9,806,221	251,911
France.....	27,958	6,241	
Germany.....	42,594	28,650	43,663
Hamburg.....	59,414	4,196,014	164,465
Holland.....	332,350		
Italy.....	17,415		
Spain.....	174,784	207,918	132,449
Other countries.....			
Total.....	3,906,195	20,726,323	20,617,453

Of other oils that are competitive with cotton-seed oil the imports were: Poppy oil, 2,348,017 pounds, nearly all from France; peanut oil, 1,111,356 pounds; coconut oil, 3,437,314 pounds; lard, 30,240,014 pounds, of which 26,903,307 pounds are credited to the United States; butter, 11,101,393 pounds, the bulk of it from Holland.

COMPETING PRODUCTS.

The different products which compete with cotton-seed cake and meal as feedstuffs are: Linseed cake, price per 100 kilos, \$3.47; colza cake, \$2.50; peanut cake, \$2.94 to \$3.23; sesame cake, \$2.86 to \$3.67; coconut cake, \$3.18.

The products which compete as fertilizers are: Colza cake, price per 100 kilos, \$2.50; raven cake, \$2.12 to \$2.31; castor-oil cake, \$1.93 to \$2.12.

All these products are in great demand, but it is impossible to differentiate the sale in Belgium, as a great part of those manufactured

in this country are exported to France and Germany. The importation of cotton-seed oil has undergone the following fluctuations: Importation in 1904, 12,229,567 pounds; 1905, 23,342,669 pounds; 1906, 20,726,323 pounds.

The importation of cotton seed was as follows: In 1904, 14,805,776 pounds; 1905, 4,431,291 pounds; 1906, 3,809,018 pounds.

INCREASED DEMAND FOR COTTON-SEED PRODUCTS.

During the last few months the demand for cotton-seed products has increased very notably, and a good deal of cotton-seed oil has been imported. All table oils, as far as can be ascertained, are furnished in sufficient quantities for consumption, but a great many producers buy large quantities of cotton-seed oil to mix with edible oils, especially olive oil. For the manufacture of feedstuffs the bolted and double-bolted meals from Texas and New Orleans are mostly used.

The Government makes no objection to the use of cotton-seed oil if it is sold under its own name, but if sold as olive oil the royal decree of December 28, 1896, enacts certain penalties against the persons who are guilty of such fraud. Cotton seed and cotton-seed products are free from duty in Belgium.

The following table gives the full imports of cotton seed for the year 1906 and countries from whence imported:

Country.	Pounds.	Country.	Pounds.
United States.....	2,018,764	Turkey.....	442,200
Brazil.....	448,140	Other countries.....	216,388
British India.....	554,840		
Hamburg.....	128,687	Total.....	5,809,019

ANTWERP.

CONDITION OF THE MARKET FOR MEAL AND OIL.

Consul-General Henry W. Diederich, of Antwerp, makes the following report on the trade in cotton-seed products and their competition with linseed products in Belgium, under date of December 13, 1907:

There is practically no sale for cotton seed at Antwerp. No reasons could be given by the different merchants why American cotton seed and cotton-seed cake had been entirely supplanted by American linseed and linseed cake, and it must be due entirely to this market having been neglected. The Belgian farmers only know of linseed oil cake and are therefore prejudiced in its favor. Of the 232,744 tons of oil cake of all kinds imported into Antwerp in 1906, 162,201 tons came from the United States, and of the 156,315 tons of linseed 25,728 tons came from the United States. The total importation into Belgium for 1906 of cotton seed was 1,731 tons, divided as follows: 917 tons from the United States, 203 tons from Brazil, 252 tons from British India, 201 tons from Turkey, and the balance from various other countries.

Notwithstanding the fact that cotton seed oil cake and cotton seed are far richer in fattening properties than linseed I do not think that consumers could be prevailed upon to use it without practical demonstrations of that fact, not even with prices lower than those now paid for linseed cake. Cotton-seed shippers, therefore, must be prepared to make sacrifices in order to get a footing on this market, and it would seem to me that the only means of accomplishing this end is to instruct the Belgian farmer as to the advantages of the cotton-seed product. One way would be, for example, to distribute sacks of cotton seed for fattening purposes and thus prove that, in equal quantities, cotton seed goes much farther than linseed. This campaign can not be expected, however, of the local brokers or dealers. It must be done by someone who knows how to show the merits of the article and also how to use it. This is the only practical way to bring about results. It is useless to attempt the campaign by any other method. The Belgian peasant can not be compared with the American farmer, who reads his agricultural papers and benefits therefrom. Here the peasant adheres to the customs and traditions of his ancestors, and nothing that he reads has any effect upon him unless it is illustrated by an ocular demonstration. It would require a few hundred tons of cotton seed and cotton oil cake, an energetic man fully up in the technicalities of the trade, and a dogged determination and unwearied patience to get the first start. I have no doubt the rest would be plain sailing.

FAILURE OF CRUSHING TRIAL—OIL PRICES.

About three years ago a few Belgian linseed crushers attempted to manufacture cotton oil from cotton seed which they imported in small quantities from Egypt and India. The trials, however, were not at all satisfactory. The manufacturers succeeded in obtaining a reddish oil similar to raw cotton oil, but they could not give it the required color in refining. This seems to be a specialty of English and American cotton-seed crushers, who will on no account part with their secret. The attempts, therefore, have been given up, and it is not probable that further trials will be made.

The prevailing prices for cotton oil on the Antwerp market, f. o. b., barrels included, on December 16 were: English, \$10.71 per 100 kilos (220.4 pounds); American, \$11.86 per 100 kilos. There are practically no stocks whatever, shipments made in all cases being previously contracted for.

The prevailing price of linseed oil was \$9.07 per 100 kilos naked at mill. It is stated that the River Plate linseed crop is abnormally large, and that there are further prospects of a very good crop from India. This will consequently reduce prices of linseed oil very considerably, thus indicating bad sale prospects for cotton-seed oil owing to the much lower prices of linseed oil.

DENMARK.

MARKET CONDITIONS.

COOPERATIVE FARMING—RELATIVE USE OF FEEDSTUFFS—OUTLOOK FOR COTTON OIL.

Special Agent J. L. Benton, writing from Copenhagen under date of June 9, 1907, furnishes the following report on the sale and consumption of cotton-seed products in Denmark:

Agriculture is Denmark's most important industry. The statistics show 88 per cent of the country's export under the heading "Agricultural produce," while manufactures represent only 8 per cent and fishing 4 per cent. Denmark's population was in 1906, 2,600,000. Of that number 54 per cent belonged to the agricultural classes, of which 46 per cent were actual farmers. Only one-fifth of the agricultural population are tenants or renters; the remaining farmers are freeholders. The laws prevent the creation of large farms, as it is forbidden to join small farms and thus make large plantations. The following tabular statement shows the classification of lands and the total acreage of the several classes:

-Acres.	Number.	Total.	Acres.	Number.	Total.
7 or less	116,614	239,604	67 to 135	25,615	2,946,295
7 to 11	16,988	159,832	135 to 270	6,502	1,169,454
11 to 22	28,922	473,998	270 to 540	1,590	574,946
22 to 33	17,728	496,962	540 and over	822	969,827
33 to 67	35,267	1,752,121			

In addition to the foregoing there are some 68,000 small holdings. The quantity of land usually belonging to each holding is about 4 acres. On a holding of this size there are usually a couple of cows, a dozen pigs, and 50 to 150 fowls. The value of such a holding is reckoned at about \$1,200, including the live stock. Many of these small holdings are now worked as perfect model farms, and by intense cultivation usually give the owner a moderate income.

COOPERATIVE MOVEMENT.

It is on Danish soil that the cooperative movement has reached the greatest development. This movement is almost entirely confined to the agricultural classes, and the object is the economical disposition of their farm produce and the purchase of all necessities. The principal societies comprise the cooperative dairies, the cooperative bacon factories, and the cooperative egg export organizations.

The first cooperative dairy was established in 1882. Now there are 1,085, with 158,170 members, and by these about 4,506,000,000 pounds of milk are annually treated, from which 176,000,000 pounds of butter are produced. In 1903 there was in Denmark a total of 1,830,466 head of cattle, of which 1,066,698 were milch cows. Of

these cows, 90 per cent were on farms delivering milk to the cooperative dairies. In addition to the cooperative there are many private dairies. The average annual amount of milk per cow is 5,700 pounds. The production of milk per cow is greater on the small than on the large farms. The most important of the large dairies is Trifoleum, in Haslev, which is not only Denmark's but the world's largest dairy. This dairy has 85 members, with 12,000 cows, and employs daily 400 persons. Denmark's total export of butter in 1906 was 169,796,000 pounds, and the average price was 24.8 cents per pound. Nearly all of Denmark's export of butter goes to Great Britain.

BACON FACTORIES—EGG EXPORTS.

The bacon factories are similar to the dairy societies. The first one was founded in 1887. There are now 33 in operation, with a total of 91,000 members. In 1906 the 33 factories slaughtered 1,051,358 pigs. These factories fix every week a certain quotation, according to which the members are paid in advance a certain sum, dependent on which class (first, second, or third) the pig is judged to belong to. At the end of the financial year the accounts are brought forward, expenses paid, and the remainder paid to the members. Every pig killed in Denmark is supposed to be examined by a veterinary surgeon appointed by the Government and under control of department of agriculture. The largest cooperative bacon factory is at Esbjerg. It has 8,600 members and slaughters annually 100,000 pigs. The average pay of employees of this plant is \$350 per year. Total export of bacon in 1906 was 174,350,000 pounds, and the average price 12.7 cents per pound.

There is also what is known as the Danish cooperative egg exporters. This society has 500 local centers, and uses the branding system on all eggs. For examination of eggs electric light is used. This society exported in 1906, \$1,250,000 worth of eggs. The total export of eggs in 1906 was 32,933,333 dozens, the average price was 21 cents per dozen. As in butter and bacon, Great Britain was the largest purchaser of Danish eggs.

FEEDSTUFFS.

In developing the dairy and bacon industries the Danish people, through their numerous cooperative societies, have devoted much time and study to feedstuffs. They now claim to be the most economical and scientific feeders in the world. Twenty years ago the linseed was the cake most desired by the feeder. Then came a few years of rape cake, and after that the sunflower cake from Russia met with favor. It is now the American cotton cake that the Danish feeder most desires. In 1906 the imports of cotton cakes from the United States equaled the imports of all other oil cakes from all other countries. Danish authorities rank the several oil cakes in respect to their feeding value as follows:

Peanut	135	Sunflower	116
Cotton:		Rape seed	113
Decorticated	137	Linseed	112
Uncorticated Bombay and		Cocunut	103
Egyptian	90	Palm	92
Sesame	127	Wheat bran	93

The imports of oil cake for 1906, according to Danish statistics, are as follows (1 pund=1.1 pounds).

	Punds.		Punds.
United States.....	405,100,000	Russia	242,730,000
Sweden	820,000	All others.....	3,460,000
Germany	96,730,000		
Great Britain.....	41,820,000	Total pounds.....	825,880,000
France	35,220,000	Total pounds.....	908,468,000

Of this amount 764,880,000 pounds (\$41,368,000 pounds) were received for consumption, and the average price for all was \$29.40 per ton, c. i. f. Copenhagen.

MOVEMENT AND PRICES OF CAKE.

The import of oil cake for 1905 was 810,100,000 pounds (\$91,000,000 pounds). The oil cake from Russia was all sunflower, with exception of 24,000 tons, which was cotton cake. This Russian cotton cake in manufacture and feeding properties equals the best American cotton cake. It is produced in provinces just northeast of Persia and reaches this port from the Caspian Sea via St. Petersburg. It is usually bought of merchants at Baku, located on the west side of the Caspian Sea. The north Russian sunflower cake comes mostly from provinces of Saratof and Samara via St. Petersburg. The South Russian sunflower cake comes via Mediterranean and is mostly from the Black Sea ports of Odessa and Novorossiisk. Some little of the sunflower cake is round in shape (called peasant cake) and on account of its bad pressing is loose and sours quickly. Both sunflower and cotton cake come loose (not sacked).

Some undecorticated cotton cake comes from Bombay and Egypt, but mostly from the latter. The Bombay cakes show a more regular composition, with a total contents of nitrogen and fat of 23 to 25 per cent. This in the Egyptian cake varies from 26 to 37 per cent.

The oil cake from Germany is rape, palm, and linseed; that from Great Britain mostly palm, and from France, peanut and sesame.

The local prices to consumers of the various oil cakes for 1906 were as follows, per long ton:

Month.	Cotton.	Peanut.	Rape.	Palm.	Sunflower.
January.....	\$36.45	.....	\$30.24	\$30.24	.....
February.....	36.45	.....	30.78	32.13	.....
March.....	34.84	\$36.45	30.51	32.13	\$36.72
April.....	34.84	36.45	29.70	32.13	36.72
May.....	35.64	36.18	30.61	31.88	35.45
June.....	35.91	36.18	30.61	31.88	33.21
July.....	36.18	36.45	30.51	31.88	32.94
August.....	36.18	37.00	31.28	32.13	35.10
September.....	35.91	37.00	31.28	32.13	34.54
October.....	35.64	37.00	31.50	32.13	35.45
November.....	35.18	36.69	31.50	32.40	34.50
December.....	34.84	36.69	31.69	32.40	34.20

RAPE SEED AND LINSEED.

In 1906 4,140,000 pounds (4,554,000 pounds) of rape seed and 50,332,000 pounds (55,365,200 pounds) of linseed were imported for manufacturing. The linseed originated as follows (1 pund=1.1 pounds):

	Punds.		Punds.
United States.....	11,290,000	Norway	1,150,000
Russia	3,150,000	All others	4,282,000
Germany	19,780,000		
Great Britain.....	10,390,000	Total pounds.....	50,332,000
Holland	290,000	Total pounds.....	55,365,200

In 1905 the total import of linseed amounted to only 35,570,000 pounds (39,127,000 pounds). The imports of bran and gluten meal were as follows:

	Punds.		Punds.
United States.....	4,710,000	France	75,000
Sweden	1,580,000	Norway	1,080,000
Russia	13,290,000		
Germany	29,310,000	Total pounds.....	149,995,000
Great Britain.....	98,960,000	Total pounds.....	164,994,500
Belgium	400,000		

Of this amount 148,790,000 pounds were received for consumption, of which 145,960,000 pounds were bran and 2,830,000 pounds gluten meal.

The present stock of oil cakes in Denmark is considered somewhat larger than usual, but the stock is mostly off-quality cake. It is supposed to be sufficient for the summer months and will be exhausted by October. Practically no meal reaches this country, as the farmer prefers to take the cake and break it with his own machinery. There is not so much waste in shipping cake as in meal, and it is indeed fortunate that this country, which as a purchaser of oil cakes is the largest in the world, takes the cake in preference to the meal.

Owing to the bad condition of all corn imported, the question of a suitable feed for hogs is at the present occupying the attention of Danish feeders. For many years cotton meal has been successfully used here in a small way as a hog feed. I am reliably informed that the extensive use of cotton oil cake as a feed for hogs will be advocated.

COTTON OIL.

The duty on cotton oil in Denmark is 4½ øre per pund (\$0.0112 per 1½ pounds). This duty applies to all edible oils. Pure lard and compound lard are admitted free. So little edible oils are received here that the Government keeps no definite statistics of each. The best information from dealers indicates that only about 11,020,000 pounds of edible oils were consumed in this country during the year 1906. Of this amount 4,408,000 pounds, mostly sesame oil, was manufactured in Denmark. The imports were as follows:

	Pund.
Cotton oil	1,500,000
Peanut oil	1,000,000
Sesame oil	2,000,000
Neutralina	1,500,000
Total	6,000,000

Neutralina is an American product. It contains about 90 per cent cotton-seed oil, and coming as compound lard (duty free) is finding a ready market with the margarine manufacturer. The product has been coming here for only a few months, and it seems that one American manufacturer is supplying the trade.

In Denmark there are but two mills manufacturing edible oils—one at Copenhagen, devoted entirely to the manufacture of coconut oil, and one at Aarhus manufacturing coconut, peanut, and sesame oils. The plant at Copenhagen in 1906 (the second year of operation) manufactured 8,000,000 pounds of coconut oil. About one-half of this was consumed in Denmark and the remainder exported to Norway, Sweden, Holland, and Great Britain. The coconut butter manufactured at this plant is advertised extensively, and found in all shops in a neat and attractive paper package of one pund each. The nuts are imported from Java, the Straits, and Ceylon. The average yield in manufacturing is 61 per cent oil, 37 per cent cake, and 2 per cent waste. The crop is reported short and prices continue high. The total import of cocoanuts was, in 1906, 21,410,000 pounds and in 1905, 18,400,000 pounds.

In addition to the two plants named, there are four plants engaged in manufacturing linseed and rape-seed oils, the rape seed being imported from Germany and the linseed from Russia, North America, and Argentina. The six plants crushing oil-bearing seed employ 410 people, with an average pay to operatives of 3½ kroner per day (1 krone=26.8 cents).

MANUFACTURE OF MARGARINE.

Practically all cotton oil received by Denmark enters into the manufacture of margarine. For cooking purposes pure lard and compound lard are used, and the salad oil is supposed to be pure olive oil, but analysis shows it 80 per cent cotton oil and 20 per cent olive oil. Sixteen margarine plants are now in operation, employing 1,807 operatives. Two margarine plants closed down during the past twelve months and the industry in this country is not supposed to be in a very flourishing condition. The production of margarine in 1906 was 52,725,361 pounds; 1905, 48,042,426 pounds; 1900, 35,784,002 pounds. The average price was, for first quality, in 1906, 16.6 cents per pound; second quality, 12.3 cents per pound; in 1905, first quality, 15.5 cents per pound; second quality, 11.5 cents per pound.

In addition to that manufactured, the imports of margarine, in 1906, were 9,581,000 pounds; 1905, 7,458,000 pounds; 1904, 6,413,000 pounds. The greater part of the imported margarine comes from Holland and the remainder from Norway and Sweden. No margarine is exported from Denmark. The duty on the raw material will not permit the Danish manufacturer to compete with the manufacturer of the Netherlands, where the raw materials are received practically free of duty. No duty is imposed on margarine imported into Denmark. Margarine manufactured in Denmark must contain at least 10 per cent sesame oil, not over 15 per cent butter fat, must be white in color, and the package must be oblong in shape. These requirements are imposed by law to guard the reputation of Danish butter, which is the largest product exported from this country.

There is at present much agitation here in regard to lowering the duty on edible oils, as well as a change in the present margarine law.

It is expected that some action will be taken on the two amendments during the present year. During the past winter an experiment was made at this place in the manufacture of cotton oil, but the result was not satisfactory. The manufacturer claims, however, that he has succeeded in importing the English cotton oil and improving the quality sufficient to compete with the American product as an edible oil.

OUTLOOK FOR COTTON OIL, NOT ENCOURAGING.

I regret to say that little encouragement is presented for an increased use of cotton oil in this country, except through the margarine industry. The people of this nation are educated to the use of pure lard as a cooking fat. They believe in the excellence of their lard as fully as they do in that of their bacon. The production of hog lard, when not sufficient for their wants, will naturally be supplemented with the importation of lard—mostly hog lard. The reduction of the present high duty on cotton oil would greatly increase its consumption by the margarine manufacturer, and will enable the manufacturer of Denmark to be on an equal footing with his competitor in Holland.

I forward a copy of the present margarine law. Section 14 is as follows:

Margarine and margarine cheese must contain a "Røbestuff," which is easily proved by chemical analysis, and which has no influence whatever on the quality or color of the margarine or the margarine cheese. Fat emulsions must in the same way contain a "Røbestuff" easily seen by chemical examination. The further particulars about same are fixed by the minister of agriculture.

Margarine, margarine cheese, and fat emulsions must not be manufactured, imported, exported, transited, or sold when the article does not contain the "Røbestuff" demanded.

In order for the manufacturer to comply with these provisions the minister of agriculture has designated the use of 10 per cent sesame oil. This was opposed by the manufacturer, because the price of cotton oil is less than that of sesame oil. It is now thought that the use of 5 per cent sesame oil will be sufficient to comply with the section quoted. This reduction is within the power of the minister of agriculture, and an effort should at least be made to secure it. The reduction of this rule from 10 per cent to 5 per cent sesame oil will practically double the consumption of cotton oil in Denmark.

There is not a pound of soap manufactured in this country, and the field looks especially interesting for an American manufacturer.

No linters are used. I do not see any future in this country for linters.

SUPERIORITY OF THE AMERICAN PRODUCT—COMPETITION AND PRICES.

The following, in continuation of his report on market conditions in Denmark for cotton-seed products, is furnished by Special Agent Benton from Aarhus under date of June 15, 1907:

The statistics of Denmark for 1906 show the import of 825,800,000 pounds (908,468,000 pounds; 1 pund = 1.1 pounds) of oil cake. Of this, the port of Aarhus received 214,901,500 pounds, placing it among the first ports of the world for oil cake. While American cotton cake forms about two-thirds of the receipts here, all known commercial oil cakes are imported and can be found in stock any season

of the year. The cakes are of many different shapes, but the Danish feeder has no objection to any shape. The 18-inch square sunflower cake is as easily handled as the round peanut cake, and neither is preferred to the oblong American cake. All are run through a small breaker before using, and consequently the shape is immaterial. The machine used for this purpose is about the size of that usually seen in mills elsewhere, except that it is made up much lighter.

The discharging of cake in Denmark is in every way more satisfactory than that of meal at Rotterdam. Broken bags are seldom noticed, and apparently the only improvement that can be made is the better sewing of the bags and the loading into the ship of each mark separately. All other oil cakes are shipped loose and the trade is well pleased with this method. In the shipment of sunflower cake a very cheap bark matting is used to keep the various lots separate. The cost of discharging is slightly more on the loose cake, and it takes about twice as long as when in bags. The loose cake is sold with a guaranty of not over 25 per cent broken cake, a quarter cake being considered equal to a whole cake. I understand there is never room for complaint on this. The time it would take in discharging an American cargo is the greatest objection to shipping it loose. Practically no attention is now paid to separating the different marks. The loose shipments would therefore answer about as well, and the cost of the bags to the American manufacturer would at least be saved.

COST OF DISCHARGING CARGO.

The cost of discharging at Aarhus per 2,000 pounds (2,200 pounds) is given below. The charge is paid by the ship and the receiver, respectively, in the proportions stated. The figures in the following table represent øre, 1 øre being equal to 0.027 cent United States currency:

Articles.	Ship pays.	Receiver pays.	Total.
American cotton cake.....	55	30	85
Oil cake from Black Sea.....	90	70	160
Oil cake from Baltic Sea.....	70	70	140
Peanut cake.....	90	70	160

It would, of course, be interesting to the trade to know how much of each of the various cakes are received in Denmark; but this I am unable to give, owing to the fact that everything is put under the heading "oil cakes." However, I give below the purchase of various oil cakes made during 1906 by the Jyds Andels-Foderstofforretning (Jutland Cooperative Feedstuff Company). This company is the largest individual buyer of oil cakes in Denmark, and all cakes purchased are for consumption by its various members. The following table will serve to give some indication of the average purchase of each of the various cakes:

Cake.	Pund.	Cake.	Pund.
Cotton.....	75,476,403	Peanut.....	1,289,821
Sunflower.....	19,863,940	Sesame.....	254,724
Rape.....	2,154,081	Palm.....	114,197
Linseed.....	10,282,822		
Hemp.....	9,067,838	Total.....	118,563,851

Below will be found table showing the analysis of all oil cakes received in Denmark during 1906. This table is given back as far as 1901, in order that the American manufacturer can see that under Danish classification American cotton cake is not as even running as the competitive cakes. The decline of protein and fat in the American cake is frequently discussed in the press of this country, and the cause usually given for this is the bad quality of seed now being used for planting purposes. That may be correct. However, this decline is the subject of much comment in this country. The table follows:

Cake.	1900-1901.	1901-2.	1902-3.	1903-4.	1904-5.	1905-6.	1906-7.
Cotton:							
Russian and Texas.....	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Common Quality.....	57.0	55.71	54.58	52.99	50.13	49.52	56.5
Bombay.....							48.4
Sundowner.....	48.5	48.91	49.79	48.45	47.07	48.35	28.9
Saratow, square.....				48.39	47.07	48.12	47.9
Baltic, long.....				49.24	49.24	49.43	49.0
Black, thin.....				47.10	47.65	47.43	47.5
Rape.....	43.0	40.64	39.87	42.10	41.87	41.05	41.5
Linseed.....	39.9	40.27	38.97	38.69	38.68	37.17	37.4
Germany.....				38.76	39.68	37.88	38.2
North Russia.....					36.11	39.49	38.9
Local.....				38.40	39.94	37.83	39.0
Hemp.....	41.1	40.52	41.37	41.94	40.89	41.42	41.0
Thick, 3 to 4 inches.....				42.12	40.53	41.73	40.9
Thin, 1 1/2 inches.....				41.68	41.16	41.10	41.2
Peanut.....	56.6	57.80	57.24	58.15	57.85	56.52	57.0
France.....				56.89	56.93	55.94	56.1
Local.....				61.07	59.33	57.45	58.2
Cocunut.....	33.8	34.17	30.76	31.42	31.49	31.34	32.2
Palm.....	26.6	24.24	26.83	25.32		24.88	25.3
Sesame.....	56.2		54.92	54.00	53.85	54.67	52.3

RELATIVE VALUE OF OIL CAKES.

Of course the consumption of each cake is the most valuable indication of what is thought of it, but the following statement from a prominent Danish authority represents about the consensus of opinion of the various oil cakes. He says:

The peanut cake is a very valuable one. It may be that at first the cows will dislike it, but generally and absolutely good effect must be seen in the quality of milk by the use of this cake.

The cotton-seed cake, with contents similar to the peanut cake, and the same good qualities and effects, is rather hard and should be crushed rather fine. This cake is tasty and extremely healthy for the cows even in greater quantities (6 to 7 pounds).

The sunflower cake is frequently used. It is a very good cake for the cows; still it is, according to its contents, rather too dear, as it takes five-sixths of a pound to make up for 1 pound of corn.

Sesame cakes are very much like and about the same as sunflower cake.

Rape cakes are not much used, and should not be, as they often have been adulterated by other seed of poisonous character.

Palm cakes have quite exceptionally low contents of albumen and are therefore less valuable. The cakes contain a fat stuff of a hard consistence and usually have a bad effect.

Hemp cakes are usually applied for breeding, to which they are exceptionally fit; but they may also be used for milking for milk cows when price is corresponding with contents.

Linseed cakes are usually somewhat expensive in proportion to their contents, but do very well with young calves.

STRONGEST COMPETITORS OF AMERICAN CAKE.

Sunflower cake.—Three grades of this cake usually reach the Denmark market and are commonly designated as "Saratow," "Baltic," and "Black." The Saratow is 18 inches square and is prized more highly than the others, usually bringing about 5 marks more than the Baltic and 10 marks more than the Black. New crop cake from the Black Sea will reach this market in December. That from the Baltic, owing to deficient transportation, will be delayed until May. The average freight from the Black Sea is \$3.25 to \$3.75 and from the Baltic ports \$1.90 to \$2.40 per long ton. The production of this cake is increasing rapidly, as will be seen from consular reports already published. The production doubled in the four years previous to 1901 and has, no doubt, increased since that date.

Linseed cake.—The bulk of this cake is manufactured in Denmark. A little comes from the Baltic ports, but the bulk comes from Germany. The rate of freight from Hamburg is from 80 cents to \$1.30 per long ton.

Hemp cake.—This cake comes entirely from the Baltic ports—Libau, Riga, and St. Petersburg—the first of the new crop cake reaching here in September. This cake usually comes in two grades—one 4 inches and the other 1 1/2 inches thick. The thicker one commands the best price.

Peanut cake.—With the exception of the small amount manufactured at Copenhagen and this place, all comes from Marseilles. The rate of freight varies from \$2.50 to \$3.50 per long ton. The production of peanut cake at Marseilles is estimated at 125,000 tons annually.

The following table gives the sale price of oil cakes per unit in 1906 (1 øre=0.027 cent):

Cake.	Number of feeding value units (2:2:1).	Price per hundred-weight.	One feeding value unit is paid with—
	Average.	Øre.	Øre.
Linseed.....	112	690	6.2
Rape seed.....	118	960	5.2
Cotton seed (decorticated) (best quality).....	137	630	4.6
Cotton seed (decorticated) (common quality).....	123	690	4.8
Sunflower.....	116	610	5.3
Hemp seed.....	96	480	5.0
Earth nut.....	135	690	5.1
Palm nut.....	92	665	6.5
Cocunut.....	103	610	5.9
Sesame.....	127	635	5.0
Wheat bran.....	93	525	5.6

Prices per 1,000 kilos on oil cakes c. i. f. Aarhus, June 15.

Cake.	Marks.	Cake.	Marks.
Cotton:		Rape:	
Texas.....	141	Germany.....	136
New Orleans.....	134	France.....	131
Bombay.....	87	Linseed, Germany.....	122
Russia.....	148	Hemp, thick.....	101
Sunflower.....	146	Hemp, thin.....	114
Saratow.....	146	Peanut, France.....	148
Baltic.....	141	Cocnut.....	148
Black.....	136	Sesame.....	148

The quotations are for summer shipment for Texas and New Orleans cake and for July-August in other cases.

It will be seen from the first table that cotton cake did not bring in 1906 the price of competitive cakes of less feeding value, and from the second table it will be noticed that this difference is still greater. If in 1906 cotton cake had brought the same price as the competitive cake, the manufacturer in the South would to-day be a half million dollars better off on the shipment of oil cake to Denmark alone.

COTTON CAKE SUPERIOR TO OTHERS.

It has been demonstrated in Denmark that no other cake is as productive of fat in milk as the cotton cake. Feeders of every class are fully aware of this, and cotton cake is prized more highly than in the United States. To locate a reason for the inadequate price is difficult. One importer claims that cotton cake is not as even running as the other cakes and an allowance must be made, while another importer claims that it is due to a lack of confidence in the American dealer making delivery in accordance with the contract. There is no doubt that American export business, and especially that of cotton cake, will suffer temporarily on account of the recent Hamburg-Galveston trouble. Steps should be taken to restore confidence and insure a "square deal" on both sides. Then the sale of cotton cake on the unit (sliding) scale will bring an increased profit to the American manufacturer. When confidence is restored such a plan can be put in operation and would eventually prove more satisfactory to the entire trade.

COPENHAGEN.

EXTENSIVE PURCHASES ABROAD OF SEED AND OIL PRODUCTS.

Consul-General F. R. Mowrer, of Copenhagen, writing under date of December 31, 1907, advises that cotton-seed oil and cotton-seed oil products, such as compound lard, are used to a considerable extent in the oleomargarine industry in Denmark; his trade details following:

About 2,000,000 pund (2,200,500 pounds) of compound lard and 1,000,000 pund (1,102,500 pounds) of cotton-seed oil are used here annually. The greater part of the cotton-seed oil used is what is known as the finest quality of "butter oil," and the compound lard used is also of the best quality. Cotton-seed oil is used in the manufacture of margarine to give it the proper consistency.

Peanut oil and sesame oil (*Sesamum indicum*) are also used for this purpose, which, however, are as a rule much dearer than cotton-seed oil. About 1,000,000 pund (1,102,500 pounds) of sesame oil are used annually.

USE OF OILS AND CUSTOMS DUTY.

During the last year there has been a decrease in the use of cotton-seed oil, as the oleomargarine factories have begun to use in their product a certain addition of sesame oil, about 10 per cent. This has therefore in a measure taken the place of cotton-seed oil.

Both peanut and sesame oils are pressed here, but a considerable quantity of both is imported, while all the cotton-seed oil hitherto imported has been exclusively of American production. There has lately been an effort made to press cotton-seed oil here, the result of which is not yet known.

As there is a duty of 44 øre (\$0.011) per Danish pund (1.1 pounds) on cotton-seed oil and other oils, while compound lard at the present time is free, it is said that a fine compound lard, namely, a lard made of the finest fresh stearin and best yellow butter oil in the proportion of 20 to 80, would be especially adapted for introduction here.

It is important, in seeking a market in Denmark for such a compound lard, that the raw materials used should be the best and that the manufacturers could be certain that the proportions of raw materials used would be carefully adhered to, so that there might always be a certainty of obtaining the same combination in the lard purchased for the manufacture of oleomargarine.

SEED-CAKE IMPORTS.

The importation of cotton-seed cake into Denmark during the last three years was 406,822,500 pounds in 1904, 446,512,500 pounds in 1905, and 455,332,500 pounds in 1906. There is no duty on cotton-seed cake and meal.

It is estimated that fully one-half of all the oil cake imported into Denmark consists of cotton-seed cake. The oil cake which comes in competition with cotton-seed cake is sunflower-seed cake, rape-seed cake, and flaxseed cake. Importations of sunflower-seed cake come mainly from Russia as well as some rape and flax seed cake.

By far the greater portion of cotton-seed cake imported comes from the United States. A very small quantity comes from Russia and a still smaller portion of so-called Bombay cotton-seed cake made from Indian seed comes here by way of Hull, England.

While the importation of cotton-seed cake has been steadily increasing the quality of the cake it is said has been deteriorating. The farmers here demand a light colored, crisp cake free from hulls, but they say that deliveries as a rule now show dark cake full of hulls and often as hard as stone, and that it is seldom now that cake is seen of a light color and with a minimum of hulls.

CURRENT PRICES.

During the summer of 1907 the price of cotton-seed oil was very high in this market, owing to the shortage of this product last year. The price reached 70 marks (\$16.60) per 100 kilos c. i. f. Copenhagen.

About the middle of December the price quoted from the United States is stated to have been 54 marks (\$12.85) per 100 kilos (220 pounds) c. i. f. Copenhagen. At that time dealers here could only offer from 48 to 50 marks (\$11.42-\$11.90) per 100 kilos. The variation in price is explained by the stocks on hand being sufficient for present requirements. The demand for cotton-seed oil has been much influenced during the last two years by a law which requires the use of at least 10 per cent of sesame oil in the manufacture of oleomargarine. Under present conditions, it is stated there is no active market for cotton-seed oil at price above 48 to 50 marks (\$11.42-\$11.90) per 100 kilos c. i. f. Copenhagen.

NORWAY.

BERGEN.

DIRECT TRADE ADVISED IN COTTON-SEED PRODUCTS AND LARD.

Consul F. S. S. Johnson, of Bergen, calls attention to the indirect sales of cotton-seed oil and neutral and compound lard from America to factories at that Norwegian city by European commission houses, suggesting the doing away of the middleman and of transacting business direct with the local importers. He writes:

For the purpose of bringing exporters and manufacturers of the United States into direct communication with consumers of certain articles employed in the making of butterine, I attach the names of the factories at Bergen using cotton-seed oil, neutral lard, and lard compound. Orders for these goods are now made through European commission houses whose charges for making sales are added to the cost of these goods.

Recently 1,200 barrels of fine cotton-seed oil, also a like quantity of neutral and compound lards, were landed at this port. A market has thus been created at Bergen for these goods and the demand is on the increase. There is no reason for the employment of a middleman when business could be done direct with the consumers and orders sent direct to our manufacturers and exporters. The names of the factories at Bergen are: Smørfabriken Bjørgvin; Smørfabriken Flora af 1903; Smørfabriken Fram; Smørfabriken Hardanger; Smørfabriken Idun; Smørfabriken Orion; Smørfabriken Record; Smørfabriken Viking; Smørfabriken Ørnen.

In view of the great demand and use of cotton seed and oleo oils at Bergen, I would suggest that it would be well for manufacturers of the products named to have a local agent, one conversant with prices, discounts, languages, etc., not only to receive orders, but to look up new business. I would suggest a young man of Bergen, highly recommended by business and banking firms of this city, as a person well qualified to look after the interests of our cotton seed and oleo oil men at this important seaport of Norway. [The name of the young man may be obtained by manufacturers from the Bureau of Manufactures.]

GERMANY.

CHEMNITZ.

SUGGESTIONS FOR INCREASING SALES OF AMERICAN COTTON-SEED MEAL.

Consul Thomas H. Norton, of Chemnitz, under date of April 24, 1907, furnishes a very full report on the consumption of oleaginous products in Saxony, as follows:

Cotton-seed meal is largely used in Saxony as a food for cattle. It is never imported for use as a fertilizer, but occasionally a spoiled

lot is sold for this purpose. Its value as fodder is generally recognized, and in the case of milch cows it is regarded as of a distinct value in increasing the yield of milk. It is considered unwise to feed it in too large amounts to cattle, and especially to draft animals.

Following is the practice in Saxony with regard to the use of oil-cake meals for domestic animals: Horses should not be fed with cotton-seed meal, but occasionally may be given rations of linseed meal as a prophylactic against constipation. Milch cows should not receive over 1 kilo (2.2 pounds) of cotton-seed or similar meals. Poppy-seed meal is strictly excluded from their dietary. Calves are given, by preference, linseed meal, while rape-seed meal is not permitted. When being fattened, cattle are allowed $2\frac{1}{2}$ to $3\frac{1}{2}$ kilos of oil-cake meals daily. Sheep, when being fattened, receive two-fifths of a pound of meal daily for 100 pounds of live weight. Ewes with lambs receive half of this amount. Corn is regarded as distinctly preferable to oil-cake meals for fattening swine. As a fodder oil-cake meal competes with corn and its residuary products in certain manufacturing industries; with distillery and brewing residues; with peanut meal, sesame meal, linseed cake, rape-seed cake, and rice cake, all high-priced articles.

In the Kingdom of Saxony there is an annual sale of about 7,500 long tons of cotton-seed meal, all of American origin, and all purchased by local jobbing houses of Hamburg dealers.

FLUCTUATION IN PRICES.

The grade of the American meal most favored here, and the one chiefly imported, is the double-sieved, bolted meal, containing 56 to 60 per cent fats and protein. It arrives in original packages, bags containing 165.3 pounds. The prices here fluctuate rapidly, and are apparently the direct reflex of American quotations. Local quotations vary this spring from 14 to 16 marks per 100 kilos (\$33.30 to \$38.10 per long ton). The prices per long ton, c. i. f. Hamburg, quoted to local jobbers, have been, this year: January, \$35.22; February, \$33.30; March, \$31.42. The annual sales in Saxony (and probably elsewhere) are affected by prevalent quotations and also, to some extent, by current agricultural conditions. Thus the potato crop of 1906 here was exceptionally good. As a result there was a distinct falling off in the demand for meal.

SALE OF COTTON MEAL MAY BE INCREASED.

Those largely engaged in the trade think that there is a slight, but still evident, increase in the average demand for cotton-seed meal. The question of increasing this sale is of prime importance, and I have carefully sought the opinion of leading jobbers. One said: "The sale is destined to diminish on account of the wretched quality of much of the stuff which is sent over and which has no right to the name of cotton-seed meal." Another gave me the following carefully prepared statement:

Many of our customers are not satisfied with the American meal, although we supply them with the double-sieved and carefully cleaned grade, but claim that the article prepared in German mills is of better quality and that it is far better packed. The so-called "German meal" is simply American cotton-seed

cake ground in German mills, or American meal submitted to renewed sieving and cleansing in Germany. The Hamburg firms which sell this grade guarantee no higher percentage of fat and protein than is contained in the best grades of American meal, but they charge \$1.20 to \$1.44 more per ton, and they get this higher price.

We are convinced that it ought to be possible for the American mills to so improve their grinding processes and subsequent treatment that a finer and cleaner meal can be produced. A better quality of sacks should be employed, and more attention should be paid to details of packing. The result would be to render the existence of cotton-seed mills at Hamburg totally unnecessary.

Recently we encountered a new difficulty in the trade. We purchase under the customary American conditions, guaranteeing 99 per cent of the weight on landing in Hamburg. No deduction is made when loss of weight does not exceed 1 per cent. Formerly there was little or no loss by weight. Evidently the full weight was shipped. Of late years there is almost invariably a lack of at least 1 per cent in weight on arrival at Hamburg. We are forced to the conviction that there is intentional underweighing on the part of the American shippers. We jobbers are forced to guarantee full weight. A change of practice in this connection would bring about an increase of confidence.

Another point: The meal is chiefly bought in the winter months. Ordinarily shipments begin to arrive at Hamburg early in December. We are then forced to transport it to Saxony by rail at greater expense than if we could use water transportation during the autumn months. There would be, hence, a distinct advantage if shipments of the new crop could arrive in Hamburg the beginning of October and not later than the middle of November.

The above criticisms in regard to packing, deficient weight, and preparation for the foreign market are all worthy of careful consideration by American manufacturers and dealers. The question of altering the season for shipments is somewhat different. The maximum effect in increasing transportation charges is, of course, felt most severely in Saxony and the other sections far remote from seaports. In other parts of the Empire it assumes less importance. It is naturally scarcely possible to count upon receiving shipments of meal in Hamburg at the beginning of October for products of the cotton crop of the current year.

RESIDUAL FEEDSTUFFS.

With regard to the different residual fodder stuffs, I have collected the following data, which apply chiefly to Saxony:

Corn distillery residues.—This is imported chiefly from the United States and its use is widespread here. The increase in price of late years has affected somewhat the local sale. The present quotations are 132 marks per metrical ton (\$92.05 per long ton) in carloads at Saxon railroad stations.

American corn itself is now quoted at 144 to 148 marks (\$34.27 to \$35.22) at the same stations, and occasionally the price is even below that of the corn residues. Five years ago quotations were from \$5 to \$7.50 less than now. As a result, a certain amount of spent grain from French distilleries is now brought into Germany. This so-called aromatic corn residue is imported chiefly by a firm of Rouen. It sells from \$2.50 to \$3 less per ton than the American product, but is distinctly inferior in nutritive value.

Beer residues.—The spent grain of breweries is now imported in large quantities, chiefly from the United States, and gives general satisfaction. The price is \$23.80 per long ton, c. i. f. Hamburg. Saxony purchases annually from 35,000 to 50,000 tons.

Rape-seed cake.—Germany covers most of her own demand, although there is a small import from Russia. The present local price of this cake in quantities is \$36.35 per long ton.

Linseed cake.—This comes chiefly from the oil mills of Bremen and Hamburg, although a respectable amount is imported from Bohemia. The cake costs \$33.98 per long ton at the chief railroad stations of Saxony. The meal costs \$1.29 more per ton.

Rice meal.—The few farmers using this meal import it from the rice works of Aussig, in Bohemia. Occasionally small lots from Rangoon are sold. This latter is quoted at \$23.05 per long ton. The Bohemian product is a much better grade, and is quoted in Saxony from \$25.45 to \$29.13 per long ton.

ADVANTAGES OF PEANUT MEAL.

Peanut meal and sesame meal are handled rarely as materials for cattle fodder. Attention is being directed in Germany to the manifest advantages of peanut meal as a regular comestible. It is a well-known fact that for a long time it has been a staple article in the dietary of the poor classes in Spain. The large amount of protein present—41.3 per cent—is double that contained in cotton-seed meal and about 33 per cent in excess of the protein in the meals from rape seed, colza oil, sesame oil, poppy oil, cocoanut, and palm nut, as well as of such foods as beans, lentils, and peas. Skim-milk cheese is, in fact, the only ordinary article of diet comparable to peanut meal in its percentage of nitrogenous matter. Bread made from pure peanut meal is light and porous, but it is not palatable on account of a persistent, poppy-like taste.

Recent experiments have shown that rye bread containing 25 per cent of peanut meal is scarcely distinguishable in taste from ordinary rye bread, while far more nutritious. The pure peanut meal can be advantageously employed for biscuits and crackers, as the addition of sugar and spices conceals the poppy taste. When dried and roasted, it furnishes an admirable material for soups, tasting much like ordinary bean soup. Rolls of the following composition: Wheat flour, 130 parts; peanut meal, 40 parts; sugar, 12 parts; salt, 1 part; water, 50 parts, are strongly recommended as exceedingly easy of digestion. There is probably as good a field for the efforts to build up a market in Europe for the American peanut as for the endeavors to create a demand for cotton-seed oil. At present peanut meal and peanut oil come almost exclusively from Marseille, which is the chief center of the European peanut trade and of the industrial treatment of this interesting product.

As far as can be ascertained, there is no sale of cotton linters in the markets of Saxony.

CONSUMPTION OF COTTON-SEED OIL.

Considerable quantities of the coarser grades of cotton-seed oil are consumed here in the manufacture of soap. The soap factories of Saxony and Thuringia are eighty in number. Their managers are well informed on all points concerning the raw material required in

their works. Prices and specific adaptation to special needs are the only factors entering into consideration, and probably no additional effort would materially affect the consumption of American cotton-seed oil in German soap establishments.

While but little missionary work can be done in behalf of the coarser grades, the case is quite different with the use of the cotton-seed oil as a comestible. Here there is a field for intelligent, foresighted effort, essentially similar to that so successfully employed in winning a European market for our maize products.

Practically no cotton-seed oil is now sold as such in Saxony for table purposes. Some years ago the oil was imported to quite an extent for adulterating animal fats. The rigid food laws of Germany have, however, put a complete stop to all such underhand operations. There is a somewhat limited permissible use of cotton-seed oil in the manufacture of oleomargarine. Ten per cent of the oil is added to the animal fats customarily employed. An oleomargarine factory in Chemnitz uses for this purpose about 20 tons annually.

COMPETITIVE EDIBLE OILS.

The edible fats in Germany with which purified cotton-seed oil would come in competition, apart from the ordinary preparations of butter, lard, etc., are the following:

Olive oil.—Saxony consumes about 250 long tons annually of edible oil. The consumption of the whole Empire is about 1,800 tons. In addition there is a consumption of about 4,500 tons of cheaper grades, denatured for industrial purposes by the addition of walrus oil, or by oil of cloves. Italy supplies over one-half of the total import. Three-eighths come from Turkey, and the remainder from France. The price of the different grades range from 110 to 150 marks per 100 kilos (\$12.87 to \$16.19 per 220 pounds). The chemists of the Chemnitz municipal laboratory, where there is a very careful control over all food products, assure me that they never detect an adulteration with cotton-seed oil.

Poppy-seed oil.—There is a widespread use of this oil for table purposes, especially among the poorer classes. The annual consumption in Saxony is estimated at 150 tons. The current prices are 76 to 78 marks per 100 kilos (\$8.20 to \$8.42 per 220 pounds). This oil is manufactured chiefly in the region about Magdeburg.

Peanut oil.—This is likewise a favorite for table use, and the consumption is about the same as that of the preceding oil. When of French origin, it is frequently sold under the trade designation of "Florida oil." The prices for various grades are 70 to 100 marks per 100 kilos (\$7.55 to \$10.80 per 220 pounds).

Sesame oil.—The consumption is about equal to that of the two preceding oils combined. The prices range from 70 to 90 marks per 100 kilos (\$7.55 to \$9.72 per 220 pounds).

A syndicate of German oil mills, five in number, with headquarters at Mannheim, is engaged in the expression of these three oils, producing about 100 tons per day. They furnish the major portion of the vegetable-seed oils required for the German table, although there is quite an importation of peanut oil from Marseille, in France, where the extraction is carried out on an enormous scale, yielding about

80,000 long tons annually. The crude material comes chiefly from the French colonies in equatorial Africa.

Cocanut oil.—A comparatively small amount is used in Saxony as a food product—about 5 tons annually. Large quantities are imported for use in soap manufacture.

Linseed oil.—This is extensively used as a food by the poor in Hungary, Poland, Russia, and other parts of eastern Europe. The demand for table purposes is exceedingly limited in Germany, although I am assured that it is regularly consumed by a small number in this region, and that the use is slowly extending. It is possibly due to the great influx of foreign labor of later years, largely of Polish origin.

Oleomargarine.—The consumption is steadily growing, and the manufacture is now an important German industry. There are two large factories in Saxony and several in other parts of the Empire. Chemnitz receives daily from 10 to 15 tons to cover the demand in the city and in the tributary region. The current quotations are very variable, depending on the quality. They vary from \$7.55 to \$12.95 per 220 pounds.

Cottolene.—No attempt has been made to introduce cottolene in Saxony, and the article seems scarcely known by local jobbers in fats and oils.

Germany imports annually oils and oil cake to the value of about \$16,000,000 and exports about one-third of this amount. No discrimination is shown on the part of the Government against the use of cotton-seed oil, other than the watchfulness against use for falsification and the somewhat elevated tariff rates.

TIME FOR PUSHING COTTON PRODUCTS.

With regard to the best methods for introducing into this region the use of cotton-seed oil as a comestible, probably no better form of campaign could be adopted than that organized by the enterprising representatives of such food products as corn meal, oatmeal, and the like. Energetic, well-equipped agents must be prepared to do a good deal of general missionary work. They will find less general prejudice against such an article as cotton-seed oil than is the case now in America. There it is necessary to displace the sale of the relatively expensive olive oil and animal fats. There is already a widespread use of various vegetable oils for salads and for cooking purposes, where the American housekeeper prefers the costly butter. The factor of price will largely determine the result as far as competition with the current vegetable oils is concerned. There is much less prejudice, for example, against the use of margarine in the average German household than is the case in an American family of corresponding social rank.

The time is propitious now for pushing the use of cotton by-products. Germany is intensely interested in the establishment and development of cotton culture in her own African colonies. While it will be many years before she can hope to cover her own demand for the fiber from the plantations of her colonial possessions, she is in an exceedingly receptive frame of mind for all suggestions connected with the industrial and economic utilization of every product of the

cotton plant as bearing directly upon the problem to which she is now devoting not only careful planning, but considerable money outlay.

USE OF COTTON-SEED OIL IN ORIENTAL LANDS.

Apart from the consideration of the future for cotton products in Germany, I am tempted to allude to the very pronounced field for cotton-seed oil among the peoples of western Asia and eastern Europe. The peculiar adaptation of this oil to the needs of the Moslem and Jewish populations, resultant from their aversion to all swine fats, has frequently been noted, as well as the natural predisposition on the part of the Hindoo to vegetable oils.

It is worthy of note that the adherents of the various Oriental Christian churches, notably of the Greek and Armenian rites, dispense entirely with all fats of animal origin during their Lenten and other fasts. During a residence in the interior of Turkey I was interested to note how complete was the stagnation in the market for such articles when Lent came around. Sesame oil, linseed oil, and poppy-seed oil completely superseded butter, lard, suet, tallow, margarine, etc. As the adherents of these Oriental churches number over 100,000,000 and their fasts are much more frequent than in the Roman Catholic Church, the economic desirability of studying the needs of this large fraction of the human race assumes a very distinct importance.

HAMBURG.

DECREASED STOCKS OF AND LOW PRICES FOR COTTON-SEED OIL.

Consul-General Hugh Pitcairn, of Hamburg, in response to inquiries from the United States in regard to market conditions in Germany affecting cotton-seed products transmits the following letter, dated December 23, 1907, from one of the leading importing houses of Hamburg:

The stocks of cotton-seed oil in the north of Europe, and particularly in Germany, are lighter than they have ever been before at this time of the year to our knowledge, which covers a period of nearly fifteen years, in which we have been dealing regularly in the article. The stocks of other seed oils competing with cotton oil have likewise decreased to an exceptionally low level, so that the low prices, to which cotton-seed oil has reacted in the course of the last two months is certainly not the result of overbearing stocks in the hands of consumers. Stocks in the United States being also exceptionally light, the statistical position of the oil market should be exceptionally strong, and if this is not the case the reasons are to be sought for in circumstances independent of statistical figures.

The Interstate Cotton-Seed Crushers' Association complains of the present low prices of cotton-seed oil, but we can not agree with them in the statement that these prices are really low. For several years, up to the fall of 1905, the value of choice edible cotton-seed oil moved on a basis between about 35 and 38 marks per 100 kilos c. i. f. Hamburg, when it commenced to rise gradually into the forties and remained between 43 and 46 marks until the spring of 1906 (mark=23.8 cents; 1 kilo=2.2 pounds). After that the value jumped into the fifties and continued to rule at about 56 marks per 100 kilos c. i. f. Hamburg all through the crop, whereas the oil of the new crop, October-December, 1906, was sold ahead at 7 to 8 marks lower. In the

year 1907 the course of the market was almost continually tending upward until as much as 73 to 75 marks had to be paid for available edible cotton oil during the latter months of the crop. In comparison with these prices the present value might be justly called low, but this is not the case, if the value is compared with that ruling formerly, and if it is considered that since prices exceeded about 55 marks every consumer regarded them as being excessive, and while being compelled to follow the market in its further advance, restricted to the most urgent requirements only.

The largest consumers of cotton-seed oil in this country are the margarine manufacturers. It is a notorious fact that the business in artificial butter (oleomargarine) in this country has not made any headway in 1907, which, we believe, is a direct result of the high cost of cotton-seed oil. Owing to the scarcity and high value of the latter, churners have resorted to experiments which greatly hurt the butterine consumption and increased the popularity of another product, namely, coconut butter, which in many sections of the country has almost entirely replaced butterine so far as the large requirements of bakers and confectioners are concerned.

CAUSES FOR DECLINE IN PRICES—GENERAL COMMERCIAL CONDITIONS.

The Interstate Cotton-Seed Crushers' Association states that crude oil from September to November, 1907, declined about 23 cents per gallon, which is equal to 28 marks per 100 kilos, and almost exactly corresponds to the decline in refined choice edible oil, which sunk from about 75 marks in September to 47-48 marks in November. Part of this decline we consider due to the untoward financial conditions rising up just at that time, in so far as the decline has proceeded at a faster rate probably than would have been the case under normal conditions. In fact, the market since November 19 has recovered about 8 marks per 100 kilos, or 7 cents per gallon for refined oil, but it is our opinion that this recovery will gradually be lost again and that the market for edible cotton oil for the season 1907-8 will settle on a basis around 50 marks per 100 kilos, fully warranting the decline of 23 cents per gallon on crude oil.

The conditions of industry and commerce in this country are decidedly more unfavorable than they were during the last few years. Everything points to a period of retrenchment and consequently lower standards of values for the necessities of life by the masses. Extreme prices for cotton oil, like those we have experienced when crude oil was worth 20 cents per gallon more than it is now, are bound to curtail the demand for artificial butter, of which the article in question is one of the principal ingredients, and we therefore believe the sooner American producers of cotton-seed products realize that they have to figure with the present level of values, or even a still lower one, in the current season, the better will it be for their own interests.

ANNUAL CONSUMPTION IN THE EMPIRE—PRICES AND SUPPLIES.

Vice-Consul-General E. H. L. Mummenhoff, of Hamburg, states that cotton-seed oil, meal, and cake are used in large quantities in that consular district, as approximately 250,000 to 280,000 tons thereof are annually imported into Germany, of which large quantities pass through that port on the way to the inland consumers. Writing under date of September 20, 1907, he says:

The imports into Hamburg of cotton-seed oil increased during the four years from 1901 to 1905 from 15,700 to 18,400 tons, whereas those of cotton-seed cake decreased from 176,000 to 148,000 tons. During the same period the imports of other oil cake increased from 87,000 to 119,000 tons. During the year 1905 the imports of coconut oil, which amounted to 4,300 tons in 1901, represented a quantity of approximately 6,700 tons. The imports of linseed oil increased in a similar proportion, whereas olive oil, the imports of which amounted to 4,000 tons in 1901 and rose to 6,300 tons in the year 1902, was

imported to the amount of 3,900 tons only in the year 1905. Palm and palm-kernel oil also decreased in their imports, namely, from 16,100 to 12,600 tons.

Cotton-seed oil, particularly those kinds generally known as "prime summer yellow oil," "choice summer yellow butter oil," and "choice butter oil," is chiefly used for the manufacture of margarine. For soap manufacture "summer yellow oil" and "off summer yellow oil" are chiefly consumed, whereas "choice summer white oil" is in demand for the manufacture of compound lard. Oil is also consumed for household purposes, in the shape of salad oil, and the kinds imported therefor are "prime and extra winter yellow oil" and "choice winter white oil." Cotton-seed cake and meal are both largely used as cattle feed.

FLUCTUATION IN PRICES OF COTTON-SEED PRODUCTS.

The prices for cotton-seed oil had to undergo the following fluctuations on 220 pounds during 1906 and 1907: Butter oil in 1906 \$11.19 to \$14.28, and in 1907 \$14.28 to \$18.33; off oil in 1906 \$10.23 to \$11.90, and in 1907 \$11.90 to \$16.66. Prices for New Orleans cotton-seed meal increased during the year 1906 from \$32.13 to \$33.50 per ton of 2,240 pounds. For Texas cotton-seed meal prices also advanced considerably, namely, from \$33.80 to \$34.27, and later to \$35.22. For bolted Texas meal prices dropped from \$35.46 to \$34.51, but thereupon, the market showing an upward tendency, rose to \$36.18 per ton.

Cotton-seed linters are also largely consumed in Germany, namely, for spinning purposes and for the manufacture of explosives. This article is handled in various grades, viz, low, ordinary, middling, good, and fair. The aggregate sales per annum amount from 80,000 to 100,000 bales, representing a value of approximately \$1,500,000 to \$2,000,000. Linters, in order to be used for the manufacture of explosives, must be cleaned in Germany. Prices for this article fluctuate between \$3.10 and \$5.90 per 110 pounds c. i. f. Hamburg, shipped in bales of 200 to 250 kilograms.

OILS IN THE HAMBURG MARKET.

In this market cotton-seed oil comes chiefly in competition with sesame and ground-nut oil, but only if the market is high, although ground-nut oil, coconut oil, palm oil, and olive oil are regularly imported into Hamburg; all these kinds of oil, however, are used for special purposes, in which they do not come in competition with the cotton-seed product. As feedstuffs cotton-seed cake and meal come in competition here with ground-nut linseed, and sesame cake and meal, but not with such products as rice meal, distillers' dried grains, rye grains, etc.

In all feedstuffs the imports have in recent years steadily increased in quantity, as the continental European consumption steadily becomes larger. In the year 1905 the imports into Germany of feedstuffs amounted to approximately 585,000 tons, of which 205,000 tons came from the United States. In the year 1900 these imports amounted only to 495,000 tons, the United States sending 190,000 tons, and in 1880 to 475,000 tons, only 705 tons coming from the United States.

As a chief article for the manufacture of oil and cake there is linseed to be taken into consideration. The price of linseed oil increased during the year 1906 from \$9.64 per 220 pounds to \$10.95; later it dropped to \$9.04. During the same period prices for La Plata linseed oil advanced from \$54.74 per ton to \$58.31, thereupon decreasing to the lowest price level of \$48.79. American prime western linseed cake fluctuated between \$32.13 and \$38.79 per ton.

Business in cotton-seed products is steadily increasing, and there is a favorable opportunity for American manufacturers for making new and profitable connections. [A list of importers and firms handling cotton-seed products at Hamburg is filed in the Bureau of Manufactures.]

BRESLAU.

SUPPLIES IMPORTED THROUGH HAMBURG—PRICE QUOTATIONS.

The following from Breslau district was furnished by Consul Herman L. Spahr, dated May 21, 1907:

Cotton-seed products are largely used in this district (Silesia and Posen), but separate statistics are not obtainable. The oil comes in competition mainly with linseed oil and substitutes therefor used by soap makers. The prices stand at present, per 100 kilos (220 pounds): Cotton-seed oil (wharf Hamburg without import duty), American white, 57 marks; American yellow, 56 marks; English, 54 marks (1 mark = 24 cents).

Linseed oil (inland price f. o. b. Hamburg), 47½ marks.

Cotton-seed cake or meal has to compete with linseed, rape, coconut, palm kernel, and all other oil cakes and meals used as feedstuff.

The extent of the import of cotton-seed oil depends on the quotation of competing oils in the German market. While linseed oil had a comparatively low market price (38 to 42 marks) the soap makers found profit in working it, but at its present high price they prefer cotton oil, which gives a far better yield.

There is no olive oil produced in Germany. In some parts linseed oil is used as a substitute for lard, and two mills make edible poppy oil. Coconut oil is made and largely used as a cheap substitute for butter in cooking. Olive oil is imported from France, Italy, and Austria, and cotton-seed oil from the United States.

OPERATIONS OF LOCAL MILLS.

The only concern in Germany for crushing cotton seed is at Gross Gerau, near Bremen, and its oil is said to be of fair quality. Several other factories have tried it but with discouraging results, for the oil, cake, and meal had a bitter, rancid taste and unpleasant smell, which has been attributed to decomposition or oxidation of the seed shells while crossing the sea. The oil sent by England is inferior to the American, which is always rated from 4 to 5 marks higher per 100 kilos.

A large factory was recently built in the Russian cotton district near the river Amur-Darja, at Murgab. It is said that the new factory will export most of its oil and cake, especially to Germany. The Russian Government is subsidizing it and inducing capitalists to invest in similar undertakings.

Some agricultural journals claim to notice a gradual decrease of fat and protein in cotton-seed meal. Samples tested ten years ago by the Bonn Experiment Station are said to have shown an average of 59 per cent fat and protein, and in 1904 only 53.9 per cent. They say that this decrease comes from insufficient separation of the wool and shells from the seed. Cotton-seed meal is reported to appear on the market sometimes with the indigestible shell not at all separated. This meal is offered at a lower price than the pure, but it is claimed that the difference in price does not compare with the difference in value, although fresh meal, not too much adulterated with wool and shells, is not injurious to animals.

MAGDEBURG.

LARGE CONSUMPTION OF COTTON MEAL—COMPETING ARTICLES.

Under date of May 20, 1907, Consul Frank S. Hannah furnished the following report:

Cotton-seed oil is not used to any extent in this district. In the manufacture of soap, however, large quantities of oleine, a product of the candle manufacturers in America, whose composition is unknown here, were used until the present tariff law went into effect, which has advanced the duty by new classifications from 3 marks to 10 marks (71 cents to \$2.38) per 220 pounds. Cotton-seed oils in the pure state are used for pharmaceutical and cooking purposes, and to some extent as a substitute for olive oil.

Cotton-seed cakes are not extensively used in Germany.

Cotton-seed meal is used in Germany in large quantities and particularly in this district, where the largest factories for mixing the different grades are located. Five factories here use together over 20,000 tons annually. In this connection it might be worthy of mention that the sale of cotton-seed meal is greatly restricted by a combine of importers located in Hamburg, who are in control of the importations to such a degree that the factories here are forced to buy from them at an advanced price, which not only restricts sales but compels some of the factories to use other ingredients. No doubt beneficial results would be obtained by establishing agencies in Magdeburg, where so much of this material is required. The importation of peanut products from France, as well as rice meal from India, is handled through resident agents established here.

Other articles coming into competition with cotton-seed meal for feeding cattle are poppy cakes, coconut cakes, rape cakes, and palm cakes. Germany being so rich in other and cheaper fertilizers, cotton-seed products are but little used for this purpose.

Linters are not used in this district, but are imported into the textile districts of Saxony for cleaning purposes.

BAMBERG.

CAKE PREFERRED TO MEAL—FEAR OF ADULTERATION.

Writing from Bamberg, Germany, August 3, 1907, Consul W. Bardel reports:

Bamberg being an inland district with no important commercial centers cotton-seed products do not reach here by direct importation from the United States. While cotton-seed oil, as well as cotton-seed cake or meal, is used in every part of the district, it is impossible to ascertain the quantities consumed, most of these articles being sold to this district by merchants or brokers in Mannheim and other points along the Rhine.

Cotton-seed oil arrives in casks; the cake and meal in bags. The oil is used principally by manufacturers of soap. The price of cotton-seed oil at present is \$6.48 to \$6.69 per 100 pounds; of cake, \$1.76 per 100 pounds, and of cotton-seed meal, 78 cents per 100 pounds. Cotton-seed linters are not used here.

LINSEED AN ACTIVE COMPETITOR.

Linseed oil is the chief competitor to cotton-seed oil. Linseed oil sells at present from \$7.25 to \$7.75 per 100 pounds, and therefore cotton-seed oil is, for the time being, preferred by the soap manufacturers. Cotton-seed cake and meal also come in competition with linseed cake or meal. They are used for feedstuff principally.

As long as linseed oil or cake are more expensive than cotton-seed oil or cake, the latter will be preferred. It is claimed that only olive oil is used as an edible oil in this district. There is no discrimination against cotton-seed oil as an edible.

I am informed that cotton-seed meal is generally objected to by the farmers for the reason that they are afraid the meal is adulterated, and even at the big difference in the price they prefer to buy the cake and break it into meal themselves for feeding stock.

EIBENSTOCK.

POSSIBLE MARKET FOR COTTON-SEED MEAL IN SAXONY.

Consul William C. Teichmann, in the following report from Eibenstock, tells of an opening that has developed in Saxony for American cotton-seed meal for stock feeding:

Agricultural conditions heretofore prevailing in this German district did not appear favorable to the sale of American cotton-seed products. The mountainous character of this section of Saxony hinders its agricultural development, which is confined to cultivation of rye, oats, and potatoes wherever possible, and to limited truck gardening, although even these cereals and vegetables are insufficiently raised to supply the demand. Cattle raising and dairying are only carried on to a very limited degree and by primitive and economical

methods. For cattle feed poppy, cocoanut, rape, and palm cakes are used to some extent wherever the ordinary local agricultural farm supplies do not suffice.

No cotton-seed products have thus far been introduced in this district, and the only American cattle-food articles sold here are "Maizena Food," a corn product which has gained considerable foothold, and American corn bran, which is much favored and finds a good market here. Agencies in Hamburg and Magdeburg principally supply this demand. The poor crops of last year have raised the price of cattle food materially, so as to render it worth while to look over this district for the sale of cotton-seed oil cake and meal. I believe that communications opened with the principal dealer in cattle food in Eibenstock [name filed at Bureau of Manufactures] would lead to practical results, as cattle-food supplies must now be augmented by importations.

WEIMAR.

COMPETING ARTICLES—IMPORTATIONS INCREASING.

Consul W. L. Lowrie, of Weimar, under date of April 24, 1907, reports that cotton-seed oil is not used in that part of Germany. He writes:

Cotton-seed cake is used to some extent as food for cattle, but it does not appear to have an extensive sale. Cotton-seed meal is used extensively as food for cattle, and is handled in bags of from 150 to 200 pounds. The consumption of this article in the Grand Duchy of Saxe-Weimar amounts to from 900 to 1,100 carloads a year. Its value is estimated at from \$261,800 to \$309,400. Conforming to the general advance of prices in Germany, the meal commands a higher price now than in previous years.

As food, the articles in competition with cotton-seed oil are olive oil, peanut oil, poppy oil, and tallow. In Italy and France cotton-seed oil is mixed with olive and other oils, the higher grades being for table use and the lower for the manufacture of soap. For technical purposes the principal competitors are linseed, rape, and bone oils. In the manufacture of soap cotton-seed oil comes into competition with palm kernel oil.

The competitors of cotton-seed oil cake as food are linseed oil cake, poppy oil cake, and sesame cake. No figures are obtainable as to the quantity used in the district. Peanut, palm kernel, and cocoanut meal are the principal competitors of cotton-seed meal. The use of the latter has increased extensively during recent years, especially in the dairy districts, where it is in favor as a food for cows. A merchant in Weimar states that the imports of cotton-seed products, especially oil, are increasing. The cause is the general rise in prices of linseed, rape seed, and palm kernel oil, which has been from 8 to 10 per cent since last year.

BREMEN.

PRESENT PRICES AND STOCKS ON HAND—USES AND AMOUNT CONSUMED.

Consul William Thomas Fee, writing from Bremen, January 17, 1908, on the trade in cotton-seed products, says:

According to information received from competent business men and a brief report from the chamber of commerce at Bremen, the prices of cotton-seed oil and its chief by-product, cotton-seed meal, during the past calendar year were above the average, owing to the high prices of other oil and foodstuffs.

Cotton-seed oil in Bremen is used chiefly for manufacturing purposes. Some 12,000 to 15,000 barrels of a low grade cotton-seed oil were consumed during the past year in soap making. The price paid for this grade varied from 51 to 52 marks (\$12.14 to \$12.38) per 100 kilos (kilo 2.2 pounds), c. i. f. Bremen. About four months ago the price for this article went up to 55 to 56 marks per 100 kilos, and then, owing to a decline of prices of other oils, especially tallow, it came down to 46 marks (\$10.95).

Cotton-seed oil for the manufacture of food products is imported chiefly at Rotterdam and Hamburg, and very little of this article comes to Bremen.

As to cotton-seed meal, there are on hand here at present about 2,000 metric tons. The sifted meal is sold at 152 marks (\$36.18) per metric ton (2,204.6 pounds), which is considered to be a trifle above average price.

AUSTRIA.

VIENNA.

NEW DEMAND FOR COTTON-SEED OIL.

Consul-General W. A. Rublee advises that a project for the manufacture of artificial butter on a large scale in Vienna, one of the principal ingredients of which is to be cotton-seed oil, promises to create a considerable market for American cotton-seed oil in Austria. His report, dated January 23, 1908, continues:

A company has already been formed to manufacture this new product, which is to be made according to a process recently patented by an Austrian inventor. The possibilities of the trade in this article are considered very great, as it is proposed to put it on the market not only in Austria-Hungary but in Russia, Roumania, and Turkey as well, in which countries the sale of such a substitute for butter is expected to be very large. The orthodox Jews and Mohammedans do not touch any substitute for butter which contains hog fat, and it is therefore stated that the Jews of Russia and Roumania as well as the Mohammedans in Turkey will be large consumers of the artificial butter made from cotton-seed oil.

A canvass of these countries has been made in the interest of the new company and it is reported that the prospective sales of the new

product are excellent. It is the desire of the company to form connections with cotton-seed oil producers in the United States in order to obtain the necessary supplies of cotton-seed oil. The quality desired is that used in the manufacture of carbolene in the United States. It is thought that several thousand carrolens will be used in Austria annually, and the lowest quotations against cash payment are asked for. Such quotations may be sent to the American consulate-general in Vienna, and will be delivered to the officers of the company that proposes to manufacture the new product. [The name of the person to whom offers can be sent was forwarded by the consul-general, and will be furnished by the Bureau of Manufactures to firms wishing to correspond direct.]

TRIESTE.

RENEWAL OF PURCHASES OF AMERICAN OIL.

Consul George M. Hotschick furnishes the following review of the market conditions for cotton-seed products at Trieste, the leading port of entry for Austria-Hungary, under date of January 14, 1908:

On March 1, 1906, when the Austrian prohibitive tariff on cotton-seed oil, by which the duty was raised from \$1.93 to \$8.12 per 100 kilos (220.46 pounds) came into force, the importation of cotton-seed oil into Austria became an impossibility.

For about eighteen months after the date of the enforcement of the new tariff only a few barrels of American cotton-seed oil were unloaded at Trieste, and even this small quantity did not all enter Austria, but was stored in the "Freihafen" at Trieste, and from here the greater part reshipped to the Levant. The "Freihafen," or free port, is a limited territory where goods are warehoused without paying import duty and whence they may be reshipped to other countries.

The recent low prices of cotton-seed oil in the United States enabled those Trieste merchants who were heavy buyers of this product before the Austrian prohibitive tariff came into force to become once more customers of the United States, and give orders for cotton-seed oil, because they could buy at such a low price that even the excessive tariff duty left them a margin for profit, although a small one. The low price of cotton-seed oil in the United States is the sole factor in the renewed purchase of American cotton-seed oil by the Trieste merchants. The slightest rise in the price of cotton-seed oil in the United States would at once make away with the small profit margin left to the Trieste merchants and stop the importation of this product into Austria.

CURRENT PURCHASES—OIL QUOTATIONS.

The small lots of cotton-seed oil bought since the beginning of November, 1907, are absorbed by local manufacturers as soon as they arrive at Trieste. The quantity of cotton-seed oil contracted for during the months of November and December, 1907, and to be shipped to Trieste up to about February-March, 1908, amounts to a total of about 3,500 barrels.

The prices of the different oils at Trieste, per 100 kilos net, duty paid, are (on January 14) as follows:

Olive oil:			Cocoanut oil	\$15.63 to \$16.65
First quality	\$17.66 to \$18.47		Cotton-seed oil:	
Lower grades	15.43 to 16.44		Home product	22.33
Sesame oil:			American product	21.52 to 23.05
First quality	22.33 to 27.61		Palmist	13.48
Lower grades	19.49 to 21.32		Linseed oil	12.28 to 13.04
Arachide (peanut) oil:				
First quality	25.68 to 26.59			
Lower grades	17.76 to 17.97			

CARLSBAD.

COTTON-SEED PRODUCTS NOT USED TO ANY EXTENT.

Consul John S. Twells, of Carlsbad, under date of May 22, 1907, furnishes the following:

Information received from the chamber of commerce and trades at Eger indicates that no cotton-seed oil is used in that district, neither for greasing purposes, the manufacturing of soaps and varnish, nor for the making of margarine. In this commercial district there are no factories making varnishes or artificial fats. Small quantities of cotton-seed cakes and meal are used by some farmers for the feeding of cattle, but as yet none is used as manure. The trade in these articles has hitherto shown no signs of development in this district, but it is reported that quantities are required in the districts of Reichenberg and Prague, in which places large soap, varnish, and artificial fat factories are located.

SWITZERLAND.

ST. GALL.

COTTON-SEED PRODUCTS ABSENT FROM SWISS STATISTICS.

Consul-General Thomas W. Peters, of St. Gall, under date of April 26, 1907, furnishes the following report:

The products of cotton seed do not appear in the Swiss statistics, and this is the more marked, as any food, of whatever nature, which exceeds in value in any one quarter of the year 2,500 francs (\$493) must be published in the statistics. This omission is probably due to the fact that the quantity imported is so small that it is included under other designations. Under the heading of "other edible oils" there is mention of the importation of 470 hectoliters or 12,416 gallons. This item may include the oleaginous products of cotton seed.

Various oils, edible and otherwise, used in trade are imported and exported in Switzerland, including butter. There was imported 409,331 gallons of pure olive oil, valued at \$294,526, including packing charges, making the price of the oil 72 cents per gallon. France and Italy furnished 403,044 gallons, leaving 6,287 gallons furnished by other countries.

Switzerland imported of other edible oils 719,202 gallons, valued at \$436,217, making the average cost 61½ cents per gallon. Of this amount France furnished 627,271 gallons and America 12,416 gallons. It is quite possible that part of this importation was the product of cotton seed.

FRESH AND SALTED BUTTER.

There was 3,929,421 pounds of fresh butter imported in 1905, valued at \$1,558,003, making the average value per pound 40 cents. During the same period Switzerland exported 43,120 pounds, valued at \$11,222, making the average value of the export 26 cents per pound. The importation of salted butter amounted to 4,888,818 pounds, and was valued at \$432,452, making the average value per pound, including packing, 8.9 cents. France supplied more than half of the importation, Germany came next, and from America there was received 310,640 pounds. During the same period Switzerland exported 53,000 pounds, valued at \$7,368, making the average value of the export 11½ cents per pound.

Switzerland, according to recent statistics, required above the amount produced within her own borders oleaginous food to support her population, as follows:

Olive oil	\$204, 525
Edible oils	436, 217
Fresh butter	1, 558, 003
Salted butter	432, 452
Reexports	2, 721, 197
	18, 590
Total	2, 702, 607

LINSEED OIL, FORAGE, AND FERTILIZERS.

There was imported 761,021 gallons of linseed oil, valued at \$261,317. Almost the total amount of this was furnished by the Netherlands and Belgium. Of industrial oil there was imported 2,060,185 gallons, valued at \$906,992, of which amount America furnished 748,578 gallons, France 548,870 gallons, and Germany 403,488 gallons. The remainder was divided in small amounts among other countries.

There was imported 80,587,540 pounds of concentrated forage, valued at \$1,080,317, making the average pound value, including packing, 12.41 cents. France, Italy, and Germany furnished the great bulk; America furnished 219,780 pounds.

The importation of unprepared fertilizers of various sorts amounted to 114,971,120 pounds, and was valued at \$699,137. From Germany there came 75,451,420 pounds, and from America 6,845,740.

The prepared or manufactured fertilizers are, in great part, furnished by Germany. The total import amounted to 44,133,320 pounds, valued at \$346,927, Germany furnishing 34,079,100 pounds, while America is not credited with any.

There is no discrimination on the part of the Swiss Government against cotton-seed oil, but it is required that all articles shall be entered under their own name and quality. No imitation of olive oil can be sold as olive oil.

ITALY.

FLORENCE.

COTTON-SEED PRODUCTS NOT USED—LARGE CONSUMPTION OF OTHER OILS.

Writing from Florence, April 27, 1907, Consul Jerome A. Quay furnishes the following report:

Cotton-seed cake or meal is not used in this district. Cotton-seed oil is used in but a very limited quantity, more in Bologna and its dependencies than in Florence, and more for industrial than alimentary purposes.

In the city of Florence the consumption of oils in 1906 aggregated 1,772 quintals (1 quintal = 220 pounds), of which 1,502 quintals was olive oil, 238 quintals linseed oil, and 32 quintals sundry oils.

The actual market price of olive oil per quintal in Florence is: For extra quality salad oil, \$23.54 to \$24.12; first quality, \$22.58 to \$23.16; second quality, \$21.23 to \$22.19; and illuminating oil, \$16.98 to \$17.37.

Genoa and Milan control the market of cotton-seed oil. Bologna has occasional quotations, while Florence does not appear in the list.

AVERAGE PRICES.

The average prices at Bologna are given in the following table:

Kind of oil.	Price per quintal.	Kind of oil.	Price per quintal.
Extra fine olive oil	\$32.01 to \$32.97	Cotton-seed oil	\$22.96 to \$23.16
First quality olive oil	29.11 to 30.08	Sesame superfine	23.16 to 23.54
Second quality olive oil	27.02 to 27.92	Sesame fine	21.80 to 22.34
Edible olive oil	24.12 to 25.09	Linseed oil, boiled	18.14 to 18.33
Oil for burning	20.26 to 21.27	Linseed oil, raw	17.75 to 17.94
Inferior oil	18.72 to 18.91	Illuminating oil	14.66 to 15.44

Olive oil imported into Italy is subject to a duty of \$1.15 per 220 pounds. Oleaginous seeds pay 21 cents per 220 pounds.

Oleaginous and nonoleaginous seeds appear conspicuously among articles of importation, but only nonoleaginous seeds are reported in the list of exportations.

Cotton-seed linters are not used in this district.

Cotton-seed oil at present does not really come in competition with any industrial or alimentary product, or substitute of olive oil.

Cotton-seed cake or meal is almost unknown both as a feedstuff or as an ingredient of commercial fertilizers.

The following table shows the importation into Italy of olive oil the past five years, the figures representing metric tons:

Country.	1902.	1903.	1904.	1905.	1906.
	Tons.	Tons.	Tons.	Tons.	Tons.
Austria-Hungary	656	605	580	427	188
France	1,182	2,074	2,673	4,102	675
Greece	1,645	1,583	1,087	277	291
Spain	7,731	10,262	7,058	6,059	18
Tunisia	575	126	1,077	1,869	579
Turkey	108	80	157	745	560
Other countries	110	1,161	141	558	81
Total	11,907	15,681	12,573	14,032	2,392

The other oils imported into Italy during the same years were as follows:

Country.	1902.	1903.	1904.	1905.	1906.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
Austria-Hungary.....	71	358	698	902	118
France.....	114	99	83	76	51
Great Britain.....	312	213	267	712	154
United States.....	2,541	3,290	3,607	10,438	2,611
Other countries.....	92	80	100	104	95
Total.....	3,130	4,040	4,665	12,292	3,029

The quantities of olive oil exported during the five years ending December 31, 1906, and the countries to which exported are given in the following table:

Country.	1902.	1903.	1904.	1905.	1906.
	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>	<i>Tons.</i>
United States.....	10,753	8,298	11,469	9,311	16,580
Austria-Hungary.....	3,520	2,626	3,374	2,581	1,784
France.....	8,364	4,845	7,126	4,365	11,596
Germany.....	4,450	1,593	2,600	1,654	3,235
Great Britain.....	4,174	3,253	3,178	2,628	3,916
Malak.....	383	302	287	316	219
Netherlands.....	2,136	2,740	2,541	1,059	2,517
Portugal.....	100	137	701	4	958
Russia.....	2,785	2,908	3,118	3,089	2,285
Switzerland.....	1,632	1,255	1,518	1,260	2,011
Turkey.....	265	68	63	33	32
Central and South America.....	7,908	7,665	10,050	7,531	13,945
Other countries.....	4,149	1,183	1,958	1,679	3,992
Total.....	51,199	37,893	48,293	35,470	66,470

This district, the largest producer of pure olive oil, probably uses the least quantity of cotton-seed oil as an adulterant. Official statistics do not refer to the consumption by districts, but by ports of entry. The Italian Government uses every effort to prevent the adulteration of its high-grade oil for export.

TURIN.

IMPORTS OF COTTON-SEED OILS—EXPORTS OF MIXED OILS.

Consul Albert H. Michelson, of Turin, under date of April 29, 1907, reports that cotton-seed cake or meal is practically unknown in that consular district. He continues:

The cotton-seed oil imported into Italy during 1905 amounted to 119,798 quintals (263,556 hundredweight), and during 1906 to 27,472 quintals (60,438 hundredweight). The decrease is explained by the small yield of olive oil in 1904-5 and by the passage of the food and drugs act, June 30, 1906. In addition to the cotton-seed oil which Italy imports, it is shipped in considerable quantities to Italian sea-ports and mixed upon the wharves with other edible oils—olive for

the most part. The resulting compound is exported to nearly every country of Europe and the Americas.

The oils and greases with which cotton-seed oil comes into competition in Piedmont and elsewhere in Italy are olive oil, linseed oil, sesame oil, coconut oil, colza oil, lard, butter, and tallow.

THE VARIOUS EDIBLE OILS.

Olive oil is produced from native trees. It is also imported from Spain and Greece, notwithstanding the heavy duty, but only when the native yield is small. The production in the year 1903-4 was 86,119,420 gallons; 1904-5, 44,644,730 gallons; and in 1905-6, 81,100,190 gallons.

Linseed oil is produced from seed imported from India and South America, and also from seed grown in Sicily, Priglie, and Lombardy. The average annual importation of linseed and colza amounts to 53,836 hundredweight.

Sesame oil is produced from seed imported from India, China, and Turkey in Asia. The average annual importation of sesame seed is 330,680 hundredweight.

Cocanut oil is produced from seed grown in Asia and Australia. The average annual importation of this seed amounts to 140,000 hundredweight.

Colza oil is produced from seed imported from India and Russia, and also from seed grown in the provinces of Piedmont and Lombardy.

Lard is imported chiefly from the United States.

Butter is produced in Italy. There is a considerable export trade. Tallow is imported chiefly from South America, but also from the United States and Australia, and used for the manufacture of stearin and candles. Italy's imports of tallow average about 400,000 hundredweight per annum. As feedstuffs linseed, sesame, and coconut cakes are most used. Colza cakes furnish the chief ingredients of commercial fertilizers of this type. Cakes for feedstuffs were sold in January at \$1.25 per hundredweight and those for use as fertilizers at \$1.05 per hundredweight.

DUTY PREVENTS IMPORTATION.

It is believed that the duties and taxes must effectively prevent, in all but exceptional cases, the extended introduction of cotton-seed oil into Italy, and that furthermore should such an increase of trade occur, taxes notwithstanding, it could only result in the promulgation of higher rates. The production of olive oil is one of the most ancient as well as one of the most important industries in Italy, and efforts to introduce extensively any oil able to compete seriously with it must face most determined opposition.

It is still more unlikely that cotton seed can be successfully imported into Italy. Apart from the fact that the seed deteriorates in conveyance, and that the percentage of oil contained in a given weight of it is low, the seed is subject to a duty of 5 lire per quintal (44 cents per hundredweight) and to the special tax of \$1.23 per hundredweight above mentioned on the oil produced from the seed.

The food and drugs act of June 30, 1906, must also be recognized as a serious obstacle in the way of an extension of trade in cotton-seed oil with Italy.

GENOA.

COTTON-SEED PRODUCTS DO NOT COMPETE WITH OTHER ARTICLES.

Consul James J. Roche, under date of June 5, 1907, reports that there is practically no cotton-seed cake or meal used in Genoa, while there is a fairly large quantity of cotton-seed oil used for mixing with olive oil. So mixed, it is reshipped under the name of olive oil to Central and South America. The consul adds:

There is very little use of cotton-seed linters in this district. The largest concern importing them, the "Cotonificio di Cornigliano Ligure," reported a year ago that it handled 100 bales annually. It is now handling 200, which are sold at from 50 to 60 lire per 100 kilos, i. e., about $4\frac{1}{2}$ cents per pound, for use in making explosives.

Cotton-seed oil does not come in competition with olive, peanut, and other vegetable oils, nor with edible tallow, butter, lard, etc., partly because of the high duty, but chiefly because the people prefer the olive oil for table use. All housekeepers use it generally in place of butter, lard, and the like. Cotton-seed products do not come into competition with any article as a foodstuff or as an ingredient of commercial fertilizers.

Liguria, consisting of the provinces of Genoa and Portomaurizio, besides producing enough edible oil to supply all its inhabitants, exports largely to the United States (\$195,770 worth in 1906) as well as to South America and other countries. Its annual production in a good year averages 11,764,700 gallons of olive oil. The duty on cotton-seed oil is large enough to prevent its importation for consumption except in case of a small olive crop here. Apart from that there is a decided preference on the part of the people themselves for their native olive oil above anything else of the sort.

COTTON-SEED OIL MIXED WITH OLIVE OIL.

Cotton-seed oil imported here is used for mixing with olive oil, as heretofore stated. The mixing is done in bonded warehouses, where the oil remains without paying duty until the process is completed, when the whole product is exported under the name of olive oil.

Taking the average value of cotton-seed oil imported here, which the Genoese Chamber of Commerce gives as 60 lire per 100 kilos, the price per pound would be 5.45 cents. This, added to the duty of 4.55 cents, would make a total of 10 cents per pound. The current prices of pure olive oil in Genoa are, per quintal of 100 kilos, or 220 pounds: Extra quality, 150 lire; fine first quality, 135 lire; fine second quality, 120 lire; and edible good, 100 lire (lire=19.3 cents).

From this it will be seen that the poorest quality of pure olive oil sells for 9.09 cents, against 10 cents for cotton-seed oil. A grade

between the "edible good" and the "fine second quality" sells at 115 lire, which would be about the price of cotton-seed oil, with duty added to cost.

CATANIA.

POOR MARKET FOR AMERICAN COTTON-SEED PRODUCTS.

The following report was furnished by Vice and Deputy Consul-General Jacob Ritter, of Catania, under date of May 29, 1907:

There is no importation or use of cotton-seed oil and cotton-seed cake or meal in this district. If imported, cotton-seed oil would come in competition with the native olive oil, with butter, and with American lard oil.

The consumption during 1906 of edible olive oil in Catania was about 3,000,000 pounds, valued at \$450,000, and that of American lard about 380,000 pounds, valued at \$67,000. No returns exist for the inland towns, but the consumption of olive oil is large, and American lard is in good demand and is appreciated.

When the home production of olive oil falls short, the deficiency is made up in this district by importations from Spain, Tunis, and Greece. Considering the large home production of olive oil, it is not likely this district will become a market for cotton-seed oil.

SPAIN.

MALAGA.

DISCRIMINATION AGAINST COTTON-SEED OIL.

Consul D. R. Birch writes from Malaga, under date of April 26, 1907, that cotton-seed products are not imported into Malaga in any form. He continues:

Olive oil of a low grade, not considered by Americans as fit for edible purposes, but exported in large quantities from Malaga to the United States for mechanical and industrial uses, would be the only oil or grease to come into competition with American cotton-seed oil if the latter were imported.

The importation of cotton-seed oil is, however, legislated against by the Spanish law of July 5, 1892, which makes it mandatory upon the several collectors of customs to mix $\frac{1}{4}$ per cent of tar or petroleum with every barrel or bottle of cotton-seed oil imported into Spain. This regulation, which was passed at the behest of the Spanish olive growers, has had the effect of putting an effectual stoppage to the importation of cotton-seed oil. The small quantity of oil produced in this section was sold retail to local consumers during the past three months at about \$3.25 United States gold per arroba (3.3185 gallons). In years when olive oil is plentiful

the retail rate is one-third less. The above price includes the payment of 3.50 pesetas, which is levied on each arroba of olive oil entering the city limits. The peseta is now worth 17 cents. When the olive-oil production of Spain is small, importations are usually made from Italy. The Spanish duty on Italian oil is 40 pesetas per 100 kilos (28.8 American gallons), which is subject to the additional foodstuff tax of 3.50 pesetas per arroba.

RUSSIA.

VLADIVOSTOK.

LARD COMPOUND AND COTTON MEAL—PRICES OF EDIBLE OILS.

The following report was furnished by Consul Roger S. Greene, of Vladivostok, under date of April 3, 1907:

Unmixed cotton-seed oil, as such, is not known on this market. Lard compounds, made of cotton-seed oil and suet, have, however, been introduced, and while the exact quantity sold or imported can not be stated, it is estimated at about 600,000 pounds for the past year. The greater part of this is purchased eventually for the army. The average price here is 7 rubles per pood, or 10 cents a pound, in large quantities.

Cotton-seed linters are not imported into Vladivostok and their use is not known here.

Edible oils now on the market with which cotton-seed oil would have to compete, their current prices, and the quantity imported are as follows per English pound, when sold by the pood (36 pounds):

Olive oil, first quality, 43 cents; second quality, 37 cents; so-called low grade olive oil, nonedible, for burning, 18 cents; sunflower-seed oil, 17 cents; nut oil (various nuts), 14 to 22 cents; hemp-seed oil, 10 cents; bean oil, 9 cents.

The total quantity of vegetable oils imported in 1906 was 1,997,648 pounds. Of these oils 1,266,153 pounds came from foreign countries, the remainder by sea from Russia. The bean oil is of poor quality, and is mostly imported from China.

Other products that would compete with cotton-seed oil are butter, a good grade of which, produced in Siberia, may be bought in bulk at about 22 cents per pound, and lower grades sometimes as cheap as 18 cents. Margarine sells at 19 cents per pound, American lard at 13½ cents, Chinese lard, very crude, at 7 cents, and edible tallow at about the same. The amount of butter imported in 1906 is stated at 1,083,766 pounds, and of other animal fatty products at 861,413 pounds. Probably an equal, if not greater, amount of butter is produced locally or brought in from other parts of Siberia by rail. Particulars as to the annual quantity and value of the sales of each are not obtainable.

MARKET FOR COTTON-SEED CAKES.

Cotton-seed cake as a feed for cattle, etc., would have to compete, among other articles, with bean cake produced locally and in Manchuria, which is here sold at about 1½ cents per pound. It is mostly

used by the Chinese for their draft animals. The exact quantity imported is not stated separately in the customs returns. If reasonable prices could be quoted a good market for cotton-seed cake as fodder might be found in the army here.

The use of edible oils appears to be increasing with the growth of the population. Very little is produced locally—none of the finer kinds—and there would consequently seem to be a good opportunity for the introduction here of various grades of cotton-seed oil. There has so far been no discrimination on the part of the Government against cotton-seed oil products, nor is there any prospect of such discrimination.

This market is very unstable, even staple articles selling frequently at below cost price, and again at remarkably high figures when stocks have been unexpectedly depleted, as often happens. The prices quoted must therefore be considered only as approximate.

WARSAW.

GENERAL USE OF COTTON-SEED OIL—COMPETING EDIBLE OILS.

Vice-Consul Witold Fuchs furnishes the following report from Warsaw, dated May 9, 1907:

Cotton-seed oil alone is used in the province of Warsaw. Cake and meal are not used. The oil is employed for technical purposes; in the manufacture of soap, when cheaper than animal tallow, in the manufacture of varnish, as an ingredient added to other oils, and also as edible oil, consumed as substitute for sesame oil. The yearly consumption of cotton-seed oil can not be determined strictly, for lack of statistics, but the aggregate import is estimated, by persons in touch with the trade, at some 20 carloads per annum. The price of cotton-seed oil varies from 5.15 to 5.50 rubles (\$2.57 to \$2.75) per pood (36 pounds) net, free Warsaw.

Cotton-seed oil as an edible oil comes within this province in competition with sunflower oil, linseed oil, hemp-seed oil, rape oil, and olive oil. The consumption of these rival oils can not be determined with exactness for want of statistics. Relative to olive oil, I have it from the railway statistics—the only reliable source of information—that the import amounts to 20,000 poods (about 330 tons) per annum. The price varies from 14 to 16 rubles (\$7 to \$8) per pood (36.1132 pounds), wholesale prime cost, free Warsaw. Sunflower oil is from 4.80 to 4.90 rubles (\$2.40 to \$2.45). Linseed and hemp-seed oil vary from 4.90 to 4.95 rubles (\$2.45 to \$2.47); rape oil from 5.20 to 5.40 rubles (\$2.60 to \$2.70) per pood, free Warsaw.

INCREASED IMPORTS.

There has been a slight increase in the quantity of cotton-seed oil imported. There is no discrimination by the Government in favor of or against the cotton-seed oil, being of inland produce only.

Cotton-seed oil is imported into this province from Russia proper. There are four manufactories in Russia which produce it as a

specialty, the three varieties or grades being known on the market as raw, refined, and double refined. Cake and meal are practically produced for export only.

Sunflower oil is imported from southern Russia, principally from Ekaterinodar and Armavir. The mill at Ekaterinodar is known to produce daily during the season not less than 5 carloads of this oil.

Linseed oil is imported from the northwest country and Volga district. Hemp-seed oil comes from southern Russia. Rape oil is produced within the province by two large mills, one of which is in Warsaw, the other at Kutno. The produce of the latter amounts to about 1,000 tons per annum.

Cotton-seed cake, linters, and meal are not used in this province.

TURKEY.

CONSTANTINOPLE.

GOOD RESULTS FROM REMOVAL OF RESTRICTIONS ON COTTON-SEED OIL.

Consul-General Edward K. Ozmun, writing from Constantinople, December 24, 1907, advises that the removal by the Government of Turkey of discriminations against cotton-seed products has resulted in increased sales of cotton-seed oil and opened an inviting market for American producers. The consul-general writes:

On May 3, 1907, through the efforts of the American embassy, the restrictions against cotton-seed oil, which had hitherto only been admitted into the Empire for industrial purposes, and after denaturing in the custom-house, were removed, and it was placed on the same footing as other edible oils, which are permitted entry after examination. From May 3 last until the recent fall in the price of cotton-seed oil there was no edible oil imported into this market. The first shipment for this market left the United States on November 16, 1907, and contracts have now been made forward. The arrivals will amount to about 1,000 barrels per month, and there are no stocks, as each parcel is sold as soon as it arrives here.

While at the date of the inquiry of the Interstate Cotton-Seed Crushers' Association, viz., November 19, 1907, cotton-seed oil had touched low-level prices, owing to the financial conditions prevailing, latest advices from New York, dated December 10, state that in view of the assistance of the Secretary of the Treasury and the larger banks the situation had improved, the market was recovering, and the prices were considerably firmer.

COMPETING ARTICLES—MARKET QUOTATIONS.

The oils with which cotton-seed oil enters into competition in this market are sesame-seed oil, imported from France, and local olive oil. The sesame-seed oil at the present time is abnormally high in price. These two oils can always be placed on the market at the same price. The preference will be given to cotton-seed oil, owing

to its better adaptability for mixing purposes. As regards local olive oil, there will have to be a margin of 10 francs per 100 kilograms (\$1.93 per 220 pounds) in favor of cotton-seed oil to compete with this local product. The present conditions are entirely in favor of cotton-seed oil, and the extent of the imports will increase. The market quotations are as follows:

Prime summer yellow cotton-seed oil, 65 francs per 100 kilos (\$12.54 per 220 pounds).

Sesame-seed oil, 96 francs per 100 kilos (\$18.53 per 220 pounds).

Both delivered c. i. f. Constantinople, including cost of barrels.

Olive oil of good quality, 105 francs per 100 kilos (\$20.26 per 220 pounds).

The new crop of olives is just commencing to be pressed, and it is expected that the price of olive oil will fall to 85 or 90 francs per 100 kilos (\$16.40 to \$17.37 per 220 pounds).

The extent of the imports of cotton-seed oil must always depend upon the result of the olive-oil crop, but it will be seen that at present (December 24, 1907) there is a margin of nearly 50 per cent between cotton-seed oil and sesame-seed oil, and even when this season's olive oil comes on the market there will still be a margin of 16 per cent before cotton-seed oil reaches the figure when olive oil will be a competitor in price, allowing the margin of 10 francs per 100 kilos between the two articles. No other cotton-seed products are sold on this market.

EGYPT.

OPERATIONS OF LOCAL MILLS.

LARGE EXPORTATIONS TO ENGLAND—PROSPECTS OF THE INDUSTRY.

Special Agent W. A. Graham Clark, writing on September 2, 1907, makes the following report on the cotton-seed oil industry in Egypt:

There are now in Egypt seven cotton-seed oil mills, of which three are at Alexandria, two at Zagazig, and two at Kafr-el-Zayat. Their ordinary annual consumption is some 800,000 ardebs of seed, which is about 95,000 English tons. The exact amount of seed crushed in Egypt is not known, owing to a lack of returns from the mills, but a leading member of the Alexandria Produce Exchange gives the following as the ordinarily accepted figures for the past five years:

Season.	English tons.	Season.	English tons.
1901-2.....	55,000	1904-5.....	97,000
1902-3.....	80,000	1905-6.....	95,000
1903-4.....	87,000		

The capacity of the largest mill is about 1,000 ardebs, or 119 tons, a day. Three of the mills run gins in connection with the mills, but accounts are kept separately, for, while cotton is ginned for anyone, there are no seeds pressed in the mills for outsiders. All of the mills refine the oil.

EGYPTIAN MEASURES FOR COTTON SEED.

Cotton seeds are bought and sold in Egypt by the "ardeb." The ardeb is a measure of capacity, being equal to 198 liters or 5.4474 bushels, but in the purchase of cotton seeds it has a definite weight attached to it, so that an ardeb of cotton seed must weigh 270 rotls. A rotl is one-hundredth of a cantar, which is equal to 99.05 pounds, so that an ardeb of cotton seed weighs 267.435 pounds, and 1,000 ardebs is taken as about equal to 119 English tons.

The cotton-seed mills buy through local merchants or cotton buyers, who act as their brokers for the season. As all the mills are located in the Delta, the seed usually has to be transported only a short distance. Nearly all the seed crushed is of the Mit Afifi kind, as that forms the bulk of the crop, and the seeds of the cottons in upper Egypt are usually used for replanting or for other purposes. Egyptian seeds being smooth and almost free of fuzz, are neither delinted nor decorticated, but the seeds are cut up and crushed just as they are, and the oil cake contains both meat and hulls. The mills therefore have not linters or hulls as a by-product. The system is the same as with oil mills in England using Egyptian seed, and the fact that they are often quoted as getting so much larger percentage of oil cake than American mills is due to the hulls being included. Egyptian seeds, however, have more oil than American, containing as high as 24 per cent, to possibly 20 per cent in the American.

ABNORMAL PRICES OF SEED, OIL, AND CAKE.

The cost of seed at Alexandria is at present (August, 1907) abnormally high, being 81½ piasters (piaster=about 5 cents) an ardeb (ardeb=5.4474 bushels), while the normal price would be nearer 60 piasters. These prices correspond to about \$34 and \$25 an English ton, respectively, or, say, \$30 and \$22 per American ton. The cost of working seed is also higher than usual, though not in proportion, as not only are wages gradually advancing, but fuel is also higher priced than ordinarily, being now about \$6.08 per ton landed from England. Egypt has no fuel and all has to be imported. With cheap freights America could well compete with England not only in coal for Egypt but for other Mediterranean countries as well.

One of the largest Alexandria mills gave the cost of working seed as ranging between 11 and 13 piasters an ardeb, which is about \$4.60 to \$5.45 per English ton. In crushing the seed very heavy presses are used, the pressure being run up to 400 tons, which on the 16-inch diameter plungers ordinarily used gives a pressure of 2 tons to the square inch. The oil is put up in American petroleum barrels of 40 to 50 gallons each. The price of the refined oil is now 3½ piasters an oke (oke=2.75 pounds), as compared with the normal price of 2½ piasters an oke. The price of oil is therefore about \$142 an English ton, as compared with a normal price of under \$100. Oil cake from Egyptian seed is now quoted in England at \$21.87 per English ton. The prices at different points in Egypt vary, but the best is about \$19.44 per ton. These abnormal prices of seed, oil, and cake are due to a variety of causes, among which may be placed the high price of cotton, but the main factor seems to be a corner in England effected by the soap dealers.

WAGES—ANALYSES OF EGYPTIAN COTTON SEED.

The wages of workmen in the Egyptian oil mills, in common with wages in all Egyptian manufacturing establishments, have been forced up of late, due to the increase in the cost of living, which has been partly brought about by the increasing prosperity of the country and partly by speculation. Though the head men of the mills are English, the workmen are nearly all Egyptian. Their wages are 8 to 10 piasters (40 to 50 cents) per day of ten hours for ordinary workmen, while the special skilled men get up to 12 or 14 piasters or over. During the pressing season, from October to April, the mills use two shifts and run night and day.

The Egyptian seed contains a larger percentage of oil, and hence is more valuable than that from any other country. Figures furnished by an Egyptian cotton-seed manufacturer of recent analyses show the following from an average good analysis: Seed, not dry, moisture 10 per cent; oily material, 24.08 per cent; seed, dry, oily material, 26.86 per cent. The seed analysis per 1,000 ardebs, or 97,200 okes, was as follows:

Constituents.	Per-centage.	Weight equivalent.
Oil	24.08	23,405
Water	10.57	10,090
Fibrous matter	65.35	63,715
Total	100.00	97,200

The oil cake contains 10.5 per cent water and 5.5 per cent oil, or a total of 16 per cent oil and water, and its weight will be $63,715 \div 84 \times 100 = 75,851$ okes or 93.18 English tons. The oil results per 1,000 ardebs will be as follows:

	Okes.
Oil, absolute	23,405
Oil retained by cake on basis of 5.5 per cent	4,172
Crude oil that may be extracted	19,233
Loss in refining, 8 per cent	1,538
Refined oil in okes per 1,000 ardebs	17,695

An analysis made on Egyptian oil cake shipped to Hull shows:

	Per cent.
Moisture	11.73
Oil	4.88
Albuminoids (containing 3.71 per cent nitrogen)	23.19
Mucilage, sugar, digestible fiber, etc.	34.45
Indigestible woody fiber	26.30
Mineral matter (ash) and sand	5.60
Total	100.00

The oil in the seed runs from 22 to 24 per cent usually, and it is considered that that retained in the cake should never be over 5.5 per cent and is usually under 5 per cent.

OIL USED FOR CULINARY PURPOSES—THE EXPORTATION OF SEED.

The great bulk of the cotton-seed oil consumed in Egypt, some three-fourths, is used for culinary purposes only, while the remainder is mostly used for soap stock. One of the Alexandria oil mill companies has furnished the Egyptian government with all the oil used for

lighting on the State railways. This amounts to some 16 tons a month and is the winter oil with all the stearin extracted; that is, pure oleo. There is also a small quantity of foreign cotton-seed oil imported into Egypt, which in 1906 came from the following countries:

Country.	Pounds.	Value.	Country.	Pounds.	Value.
United States.....	582,411	\$26,455	Other countries.....	3,259	\$168
England.....	470,049	19,841	Total.....	1,183,860	62,954
France.....	112,711	5,689			
Austria-Hungary.....	15,430	771			

In weighing unginned cotton the Egyptian cantar is taken as 315 rols, as 315 rols of unginned cotton is supposed to give 100 rols of ginned cotton. This is only approximately correct, as the proportion varies with different varieties and at different seasons, but after allowing for dust, leaf, etc., the seeds are approximately nearly twice the weight of the lint. Figuring the seed crop as twice that of the cotton crop in weight and considering the export figures and the figures for the estimated home crushing, we find that of the cotton-seed crop of Egypt there is now about two-thirds exported, one-sixth crushed in Egypt, and the other one-sixth used for other purposes, such as planting, cattle feed, etc. It is usually estimated in Egypt that the seed reserved for planting will be one-eighth of the total seed crop. This is figured on 40 to 50 liters (liter=0.908 quart) of seed to the acre, and allowing for replanting, etc. The great bulk of the seed exported goes to Hull, which is the center of the English cotton-seed crushing industry. The present cost per ton landed in Hull may be figured at \$38, the present price of seed in Alexandria being \$34, freight, \$2, and costs, insurance, interest, etc., \$2. This is a rough estimate, as the costs vary according to time of year, size of shipment, etc. The freights also are variable. The present (August, 1907) freight rates per ton from Alexandria are as follows:

Destination.	Cotton seed.	Cotton cakes.
Liverpool and Manchester.....	\$1.70	\$1.46
London.....	1.94	1.46
Hull.....	1.82	1.46

LITTLE CHANGE IN EXPORTS FOR TEN YEARS.

The export of cotton seed from Egypt has remained very near the same figures, some 3,000,000 ardebs, for the last ten years or more. This is shown by the following table giving the weight in ardebs and their equivalent in pounds and the value of the same in United States currency:

Season.	Weight.		Values.
	Ardebs.	Pounds.	
1894-1899 (average).....	3,223,076	861,963,330	\$6,675,675
1899-1900.....	3,511,667	989,142,664	9,722,589
1900-1901.....	3,016,085	808,606,692	8,964,383
1901-2.....	3,454,369	931,841,856	10,128,628
1902-3.....	2,973,825	795,304,889	8,266,085
1903-4.....	2,976,667	795,901,804	7,734,576
1904-5.....	3,231,518	864,221,016	8,689,473
1905-6.....	3,244,264	867,629,743	8,683,447

For the fiscal year 1906, which in Egypt is the same as the calendar year, the Government figures show that the total export of cotton seed was 3,693,130 ardebs, which is 994,937,967 pounds, and that it was distributed as follows:

Whence exported.	Pounds.	Value.
England.....	855,062,275	\$9,318,628
France.....	69,810,965	768,167
Germany.....	43,728,564	480,108
Austria-Hungary.....	17,222,814	318,829
Belgium.....	894,083	10,741
Holland.....	853,600	6,292
English possessions in East.....	177,577	2,056
China and the Far East.....	145,762	1,616
Turkey.....	69,833	756
Masawa.....	11,500	133
United States.....	8,616	34
Total.....	967,672,221	10,996,930

This shows that the cotton seed exported is mainly shipped to England (this year 86 per cent of the total), with small quantities to France, Germany, and Austria. The cotton-seed oil cake also is secured almost entirely by England, as shown by the following table:

Whence exported.	Tons.	Value.
England.....	71,007	\$1,122,168
France.....	3,194	50,022
Germany.....	217	3,618
Italy.....	31	489
English possessions in the East.....	9	84
Total.....	74,454	1,177,881

GROWTH OF SEED-CRUSHING INDUSTRY IN EGYPT.

The present heavy shipment of Egyptian seed is a source of great loss of soil strength, for it is well known that it is the seed and not the lint that removes the greatest amount of the plant-growing constituents in the soil. Egyptian soils especially need nitrogen, in which Nile sediment is deficient, and the seed contains some 3 to 4 per cent nitrogen that would be very valuable if restored. The fact that the soil strength contained in the seed is not returned to the land in any form, but is exported, accounts to some extent for the fact that Egyptian farmers are finding it more and more necessary to import artificial fertilizers. For this reason the increase of cotton-seed oil mills in Egypt and the decrease of seed export means more to the country than the transferring of the manufacturing profit from England to Egypt. Seed crushing in Egypt is naturally not favored by the English crushers, but the industry is steadily, though slowly, increasing, and in ten years, if not sooner, Egypt will probably crush the bulk of her cotton seed at home.

SYRIA.

ALEXANDRETTA.

IMPORTS OF COTTON-SEED OIL PRODUCTS—MARKET FOR OLEOMARGARINE.

Consul Jesse B. Jackson, of Alexandretta, reports that the importation of the products of cotton-seed oil into Syria is increasing very rapidly, due principally to the shortage in the production of butter. The consul's report, dated December 11, 1907, continues:

The constant exportation of sheep and cattle, together with the ravages of disease among the flocks and herds, has brought about an enormous decrease in the number of butter-producing animals in all this part of the Ottoman Empire. Heretofore butter and olive oil were the only fats used for culinary purposes, principally because of their great production throughout the country, and further because the Mohammedan population are firmly against the use of pork and all of its products.

Some small consignments of cotton-seed oil have been received from time to time and used principally for mixing paints and for lubricating purposes, but as yet there is very little demand for it. None is used for cooking purposes, quite a sufficient quantity of olive oil being regularly produced to meet the requirements of the trade.

The recent continued advance in the prices of foodstuffs in general, and of butter in particular, has placed this commodity out of the reach of great masses of the people, who, of necessity, are compelled to resort to a cheaper article. They naturally turn to the most wholesome and convenient thing at hand, which in this case proves to be oleomargarine, or "American butter," as they are disposed to term it. Certain commission agents of this consular district are just now very active in the quest of this article, against the use of which there is no prejudice whatever, but on the contrary it is rapidly growing in favor, the market extending to every community.

QUALITY MAINTENANCE—DIRECT SALES ARE NECESSARY.

It must be borne in mind by exporters that there is one thing necessary to maintain the continuation of this increase in trade and to hold the business when it has once been established, and that is that the quality of the importation must remain as good as it is at present, and shipments must always be fresh and free from any unpleasant flavor.

There is another matter that is true of nearly every item of importation from America, and is most strikingly apparent in the case of oleomargarine, and which has a great tendency to retard the business. That is that certain parties in Constantinople have secured exclusive representation of large American companies for all of Turkey, thereby shutting out the local importers, who will not do business except directly with the firms in the United States.

The local commission houses, through whom practically all goods are imported, are, to a great extent, in control of the trade of their patrons, who are reluctant to buy except through their regular repre-

sentatives. If American exporters will take up this matter direct with the principal importers of this consular district, it will be much to their advantage. Prices should be quoted per kilo of 2.2 pounds, c. i. f. Alexandretta or Mersine, as the case may be, and all correspondence should be in French. [A list of the principal importers is on file with the Bureau of Manufactures.]

BEIRUT.

IMPORTERS WILLING TO BUY AMERICAN COTTON-SEED OIL.

Consul-General G. Bie Ravndal reports, under date of February 8, 1908, that considerable quantities of cotton-seed oil are employed at Beirut in the manufacture of soap, which is one of Syria's leading industries. He points out the following opportunity for the American article:

Nearly all of the cottonseed oil consumed comes from Egypt. I have discussed the matter with the leading importing firm with a view to opening a way for American cottonseed oil. This concern is one of Beirut's most prominent business houses, and is willing to enter into relations with American exporters of cottonseed oil. The firm imports from Hamburg large quantities of American oleomargarine. It would prefer to deal direct with the United States, but has experienced serious obstacles, especially on two points. American shippers have demanded cash in advance, while the only practicable way of settlement is payment on arrival of goods, draft being attached to bill of lading, usually sent for collection to the Imperial Ottoman Bank at Beirut. The other serious drawback is the carelessness shown by American exporters in regard to steamer sailings, permitting goods to take three months in transit while there is a line of steamships from New York which will bring them here in twenty-five days. These observations apply also to the matter of cottonseed oil. [The name of the Beirut importing firm and that of the New York steamship agents referred to may be obtained from the Bureau of Manufactures.]

INDIA.

AN INVITING FIELD FOR AMERICANS.

ONLY ONE NATIVE MILL—SEED LARGELY EXPORTED—CHANCE FOR AMERICAN MACHINERY.

Special Agent J. Graham Clark reports on the cotton-seed industry in India, writing from Bombay, July 4, 1907, as follows:

There are many valuable oil seeds grown in India. In the majority of instances the seeds are exported to foreign countries, the oil extracted and returned to India, or sold elsewhere at an advanced price.

To retain in India the manufacturing profit, oil mills have been started in several sections of the country and others are being projected. These are for linseed, rape, or sesamum oil seeds. The native newspapers are trying to start a movement in favor of cotton-seed mills, but the exporters of cotton seed do not appear to favor this.

There is at present only one regular cotton-seed oil mill in all India and that is in Burma. This mill is located at Myingyan on the Irrawaddy, was established in 1900 with a capital of 150,000 rupees, and is under the management of A. S. Jamal Brothers & Co. Seed cotton is purchased wholesale in Burma, also some from Bengal and Madras, ginned at the ginning plant connected with the oil mill, the cotton sold, and the seed then crushed, the oil extracted and refined, and the residue made into soap. Being situated on the Irrawaddy, the factory is well located in regard to water traffic with eastern India. The cotton-seed factory alone has an annual income of 125,000 to 160,000 rupees (rupee=32.4 cents).

OPERATIONS OF A LOCAL MILL

Besides pressing its own seed the mill at Burma presses seed for merchants at the rate of 6 annas (12 cents) per maund of 40 pounds, or, if seed cotton is supplied, the charge for ginning and then pressing the seed is 8 annas (16 cents) per maund. The merchants who bring the seed are usually contractors for supplying oil to railways and steamers. It has been found by this mill that the seed from Rangoon, Calcutta, and Madras give about the same percentage of oil each. The general market rate for such seed at present is about 12 annas (24 cents) per 40-pound maund, which is equal to about \$13.50 a ton of 2,240 pounds.

The Burma mill makes crude and refined oil and soap. Ordinarily from a maund of clean seeds there is obtained 4 tolas (12 pounds) lint, from 6½ to 7 pounds oil, 19 pounds oil cake and meal, and the remainder hulls. This average, however, varies with each season. The mill runs twenty-two hours a day and has a production of 30 tons of seed daily. It was started with 20 tons a day, but owing to the great demand for the crude oil, arrangements were made to work 10 tons more per day, and this may possibly later be increased to the full capacity of the plant, which is about 50 tons. Kerosene lamps are used for night work, the town having no electric lights. The workmen in the factory are chiefly from Burma and Bengal, and their wages are 4 to 8 annas (8 to 16 cents) per day. Mistries (mechanics) and the higher skilled workmen get 1 to 1½ rupees (32 to 48 cents) per day. The engineer gets about 300 rupees per month. The expense of working 30 tons a day is about 5,400 rupees per month, which gives 6 rupees, say \$2, per ton. This is about half the American figures, where the average cost of working the seed per ton is nearly \$4.

PROCESS OF MANUFACTURE.

Making crude oil from cotton seed is simply a mechanical process consisting of cleaning the seed and separating the short lint from the seed, removing the hull from the kernel, cooking the meat to the proper consistency for pressing, and then squeezing out the oil,

leaving the pressed cake. Refining the oil is a chemical process consisting of mixing the crude oil with either caustic potash lye of 45° Baumé (3 gallons to 100 gallons crude oil) or else with soda lye of 30° Baumé (6 gallons to 100 gallons crude oil), heating and stirring, and then allowing it to cool and settle when the clear oil is poured off, leaving the brown soap sediment. Both processes are carried on with native workmen. The press used has a ram 12 inches in diameter and is worked at a pressure of 1½ tons per square inch. As usual, the pressure is applied by pumps, one set having 2½-inch and the other set 1-inch diameters, the larger pumps applying the pressure quickly until the meat is well compressed, when the small pumps give the final squeeze. Fifteen minutes suffice to completely extract the oil, which collects in a reservoir underneath. The oil as extracted is a deep red color and weighs 7½ pounds to the gallon.

There is a large demand for the oil as a lubricant for railroads, etc., and a good deal is used in the crude state without refining. The refined oil is used for culinary purposes in India and also in Japan and China. The remaining residues of oil are used in the manufacture of English and country soaps in the Myingyan factory. The selling price of the soap varies according to quality. The weights in Burma differ in some respects from those used elsewhere in India. In Burma 120 tolas is the unit (120 tolas=1 visha, about 3 pounds). The present market price for the refined oil in Burma is about 80 rupees per 100 vishas (300 pounds) and about 65 rupees for unrefined oil. The oil is packed in tins containing about 30 pounds each.

The residues of hulls are used for fuel, but could be converted into potash and phosphate of lime. Forty pounds of seed produce 19 pounds of pressed cake, which is sold in Burma and India for feeding stock, and the Chinese use it for fuel to a small extent. The price is about 1 rupee per maund. Some is exported to Japan for use as feed and fertilizer. This is sold by the market weight, "tokari," which is equivalent to 40 pounds net, being about the same as the local Burmese maund. The cost of 100 tokaris is now about 100 rupees. This is packed in gunny sacks containing 3 to 6 maunds of oil cake each. Japan uses annually immense quantities of bean cake for cattle food and fertilizer. This is obtained from Manchuria mainly, and if cotton-seed oil mills were erected in India it is probable that Japan would also buy the cotton-seed oil cake in large quantities.

COTTON OIL PREFERRED FOR CULINARY PURPOSES.

In Burma, India, China, and Japan cotton-seed oil is preferred to lard oil for culinary purposes, and it is claimed that for "shortening" and for pie crusts it is superior to lard or any other grease, both as to the taste and appearance of the finished crust. There should be a good demand in India, especially because lard is absolutely forbidden to Mohammedans, and to some other religious sects as well. There are over 60,000,000 Mohammedans in India, so the opening afforded by religious prejudice is a large one.

Refined cotton-seed oil has the color, transparency, and taste of olive oil and the same characteristics for lubricating and pharmaceutical purposes. Olein is the characteristic ingredient of each. It is almost impossible to distinguish a good cotton-seed oil from olive oil,

and the former is frequently employed to adulterate olive oil, about 25 per cent cotton-seed oil to 75 per cent olive oil being the proportions used. The Indian cotton-seed oil, however, is not as clear and pure as the American oil, nor of exactly the same taste or color, so is not so well suited for this purpose.

Owing to the absence of the gum that always exists in lard oil, cotton-seed oil is a better lubricator and luminant than the former. It burns longer and gives a brighter light, and this is one of the main uses to which the crudely extracted native oil is used in India. Being a fixed oil, it is nonvolatile, and therefore nonexplosive and safer than kerosene or similar oils.

PRODUCTION OF SOAPS AND LUBRICANTS.

The production of light-colored soap from crude cotton-seed oil, or from the residues, is obtained by purification. The oil is freed from impurities by settling or filtering. The residues are slightly warmed with a little water, and after cooling drawn off from the aqueous layer. The oil or the residues are then treated with sufficient strong soda lye so that the soap separates in flakes, which are removed from the strongly colored under layer. The soap is dissolved in as little water as possible and decolorized by the addition of chlorine water. Instead of the latter bleaching powder or potassium permanganate can be added, and afterwards acids. By the addition of an excess of such acids purified sebatic acids are separated. To remove the odor of soap made from cotton-seed oil the oil is sometimes boiled with an equal quantity of 25 per cent soda lye for three or four hours.

The Burma mill makes hard and soft soap, medicated and toilet soaps, soap for washing silk goods, etc.

As an instance, in making so-called "floating soap," 420 pounds of crude oil, 30 pounds of bleached tallow, 50 pounds of resin, and 120 pounds of coconut oil are first boiled with weak lye, the strength of which is gradually increased to 40° Baumé and the weight of which corresponds to 360 pounds. As soon as the paste is formed 600 pounds of flea-bane seed (*Semen psyllia*) is added and then the mixture boiled until the finished soap detaches itself from the boiler in the form of a dough. The compound is then perfumed, and shortly before pouring out some pulverized sodium of carbonate is added. The carbonic acid set free permeates the soap and causes the formation of empty spaces, thereby lessening the specific gravity and giving the soap the quality of floating on water.

In making a lubricant for industrial purposes there is melted together 130 pounds of castor oil, 20 pounds of animal fats, and 40 pounds of crude cotton-seed oil. Forty pounds of Indian meal is then added, and the whole boiled for 30 minutes. In making a lubricant from the oil residues, 500 parts of the oil residues and 100 parts of the water are placed in a kettle of suitable capacity and brought slowly to the boiling point. When all the oil is dissolved there is added in small portions 40 to 50 parts of hydrochloric acid of 8° to 10° Baumé and the mixture boiled and stirred for half an hour. At the expiration of this time, if the decomposition is complete, the acid forms a combination with the oil residues and the grease is liberated in the form of a thick oil. After resting for 24 hours the water containing the salts and excess of acids is drawn off and the

oil several times washed with a large quantity of water to free it from the last traces of acids. It is finally mixed with 10, 20, or 30 per cent of tallow, the quantity depending on the thickness of the oil. In making lubricants and refined oils as above, the local mill has had some success, and companies are being projected in various parts of India. I have heard of but one company that has been definitely organized, but the machinery dealers in Bombay, and also in England and America, are receiving letters of inquiry every day.

EXPORTATION OF SEED DEPRECIATED.

The interest that is being taken in cotton seed at this time is due in part to an agitation being carried on by some of the native papers in favor of local manufactures. They claim that the increasing export of oil seeds from India is a great drain on the fertility of the country, a very small proportion being returned as oil cake or other material that will finally return to the soil; also, that if manufactured in India not only would the fertilizing portion of the seeds return to the soil, being applied direct or used as cattle feed, but that the manufacture would give employment to many and yield a return on capital. Last year the export figures for all the oil seeds, except linseed, including cotton seed, rape, sesamum, earlnut, castor, poppy seed, etc., showed decided increases, and the demand has caused a rise in price, and on most of the seeds the prices tends to rise still higher.

A landlord stated that formerly a price corresponding to about \$12 a ton for Surat cotton seed landed on the cars at local stations was considered a good price, but the price had gradually risen in the last few years until it corresponded to about \$16. At Bombay I found the bazaar price for best cotton seed landed in Bombay to be 20 rupees 8 annas per candy of 756 pounds, which would correspond to about \$19.67 per English ton (2,240 pounds), which is probably higher than present rates for American seed in the United States. The cost, landed in England, would be about \$26.35 a long ton, as follows: Initial cost in Bombay, \$19.67; freight charges, Bombay to Hull, \$3.77; bags, commission, insurance, etc., \$2.92; total, \$26.35.

WEIGHTS AND MEASURES—OIL SEED EXPORTS.

It may be noted that the candy, which is the local measure by which Indian cotton seed is sold in Bombay, is given as 756 pounds, or 27 maunds of 28 pounds each. This is the ordinary bazaar weight at Bombay, but the words "candy" and "maund," like nearly all terms of measure or weight used in India, have different meanings according to the place and the article. The official Indian maund corresponds to 40 official Indian seers of 2½ pounds each, or, say, 82½ pounds. The local Bombay maund (or "man") is 28 pounds. Twenty-seven of these maunds gives the 756-pound candy by which cotton seed is quoted, while cotton is quoted on a candy of 784 pounds, which is 700-weight. The candy on which quotations are based at several points in the cotton-seed districts are different from the local Bombay cotton-seed candy, therefore unless one is familiar with local conditions quotations are sometimes confusing. In Burma a common local maund, as noted above, in regard to the mill in Burma, is 40 pounds. It may also be stated that in all Indian quotations the ton refers to the long or English ton of 2,240 pounds.

The following table shows the comparative quantities of the various oil seeds shipped from India for the last six fiscal years ending March 31, the figures representing hundredweights of 112 pounds:

Article.	1902.	1903.	1904.	1905.	1906.	1907.
Cotton seed	2,036,000	3,974,000	2,677,000	2,529,000	3,891,000	4,842,000
Linseed	7,328,000	6,328,000	6,616,000	8,789,000	11,182,000	4,319,000
Rape	6,928,000	3,927,000	4,343,000	5,135,000	1,994,000	3,725,000
Sesamum	2,447,000	3,733,000	3,513,000	2,517,000	1,685,000	2,761,000
Earthnuts	1,083,000	1,036,000	1,222,000	1,674,000	1,374,000	1,753,000
Castor	1,324,000	1,752,000	1,567,000	1,461,000	1,239,000	1,501,000
Poppy	934,000	966,000	1,315,000	1,303,000	797,000	805,000

Bombay ships over half of the total, and of cotton seed it ships three-fourths or over. India's oil seeds are bought by the United Kingdom, Germany, France, and Belgium. Practically all the cotton seeds go to Great Britain, the majority going to Hull, England. Except cotton seed, the seed quotations at Bombay are per hundredweight, and the bazaar terms July 1, 1907, were as follows: Cotton seed, 20 rupees 8 annas per 756 pounds; rapeseed (bold), 8 rupees 3 annas per 112 pounds; rape seed (yellow Grezerat), 9 rupees 13 annas per 112 pounds; castor seed (ordinary), 8 rupees per 112 pounds; poppy seed, 10 rupees 4 annas per 112 pounds. (1 rupee=32.4 cents; 16 annas=1 rupee.)

Considering the percentage of oil in the seed and the value of the finished product, cotton seed is the cheapest item in the list, notwithstanding the great rise in value in recent years.

VALUE OF COTTON SEED—CAKE UNKNOWN.

Unlike Indian cotton, of which a very small amount goes to England, Indian cotton-seed exports practically all go there, the main center of import being Hull. Hull does a very large business in cotton seed, but uses nearly all Indian and Egyptian. The Egyptian seed is better and higher priced than the Indian. Its chief advantage is that it has a higher average percentage of oil and is without the adhering fuzz or velvet that is typical of the Indian seed, and which makes the Indian seed harder for cattle to digest, as well as more troublesome to manufacture and to obtain a clean oil. The Indian cake is less palatable and contains more woolly fiber, and in some cases it has been found to have a bad effect on English cattle.

Cotton seed has always been considered a valuable product in India, the percentage of oil making it a safe food in most cases, notwithstanding its high percentage of husk and woolly fiber. It was also pressed in the rude country "ghani," but the husk and fuzz soaked up so much of the oil that this process was costly and the oil so obtained not pure. Cotton-seed oil cake is practically unknown in India, though other oil seeds—sesamum, rape, safflower, groundnut, niggerseed, etc.—are pressed in every large village and cake obtained therefrom and fed to cattle. In the cities these seeds are now pressed by hydraulic machinery, and linseed oil cake exported to Europe. At Lahore and Akola there are hydraulic press mills capable of dealing with cotton seed, but at present they are at work on other seeds.

ANALYSES OF SEED—TESTS IN THE UNITED STATES.

In regard to the percentages of oil in the Indian seed, the inspector-general of agriculture of India in 1903 had analyses made of 64

samples of cotton seed obtained from the cotton provinces, and the average results showed the following percentages of oil and fiber for each province:

District.	Oil.	Fiber.	District.	Oil.	Fiber.
Madras Presidency	17.41	17.41	Central Provinces	19.65	16.90
Bombay Presidency	17.66	17.04	United Provinces	19.89	16.89

A sample of Indian cotton seed (Surat) was recently sent by Baroda State to Bombay for examination to ascertain what quantity of oil could be chemically extracted from it. The test was made by D. D. Kanza, of the Techno-Chemical Laboratory, Bombay, and the sample was found to yield 20.9 per cent of oil.

Three samples of seed from Baroda State, which is in the center of the best cotton-growing district of India, were sent to the United States in the spring of 1907 for analysis by the chemists of different cotton-seed machinery manufacturers. The first test was reported as giving 42.7 gallons per ton of seed. The second chemist gave results as indicating 362 pounds per ton, or 18.1 per cent of oil. The third chemist reported the clean seed to consist of hulls and lint, 54.4 per cent; meat, 46.6 per cent, and that the meat contained oil, 29.68 per cent, water or moisture, 5.7 per cent.

It is expected that larger quantities of cotton-seed will be sent over to be made into cake and oil in an American cotton-seed oil mill as a test. If the practical results are favorable, and it is found that American machinery is or can be adapted to the smaller and fuzzier Indian seed, the result is that an oil mill will be immediately started in Baroda State, and that American cotton-seed oil machinery will be used not only in this but in other cotton-seed oil mills that will be built in India. Comparative figures for complete oil-mill plants, including motive power, etc., show that some American firms are quoting lower prices landed at Bombay than are the English, so the only thing needed is tests which will show that the American machinery is suited to Indian conditions.

AMERICAN ANALYSIS OF SEED.

CHEMICAL TEST IN NORTH CAROLINA SHOWS PRODUCT VALUE.

A sample lot of British India cotton seed which was received by the Department of Commerce and Labor was forwarded to North Carolina for chemical tests and experiment as to its value for utilization in oil mills in India. The results of the examination are shown in the following letter from E. W. Thompson, district manager of the Southern Cotton Oil Company, addressed to Mr. D. A. Tompkins, of Charlotte, N. C., to whom the seed was sent:

I received from you a sample of about 2 pounds of cotton seed from India, sent you by the Department of Commerce and Labor. I note the request from the Department for samples of oil made from these seed. You understand, of course, that I could not make oil in the usual manner from such a small quantity of seed. The best that can be done is to extract a little oil in the laboratory, and this

oil would not completely determine the value of the seed for the usual processes. If you can obtain as much as a ton of this seed, I will be glad to make a complete milling test and report results. In the meantime I have had a careful analysis made in our laboratory, and have sent you full copy of the result, together with a parallel analysis of average American upland seed. The principal features are as follows:

	American.	Indian.
Weight of seed (grains).....	11.9	4.5
Per cent of meats.....	55.0	44.4
Per cent of hulls.....	45.0	55.6
Per cent of oil.....	21.4	16.0

It is not possible to forecast by this analysis what the exact difference would be in actual milling by American methods, but I think a fair estimate would be as follows, assuming the present average yields and values of products and omitting linters (which were not determined in analysis):

	American.		Indian.
44 gallons oil at 35 cents per gallon.....	\$15.40	33 gallons oil at 35 cents per gallon.....	\$11.55
800 pounds meal at \$1.25 per 100 pounds.....	10.00	640 pounds meal at \$1.25 per 100 pounds.....	8.00
650 pounds hulls at 30 cents per 100 pounds.....	1.95	900 pounds hulls at 30 cents per 100 pounds.....	2.70
Total.....	27.35	Total.....	22.25

This table would indicate the milling value of India seed \$5.10 below the American, i. e., say, 18 per cent.

CALCUTTA.

COTTON-SEED EXPORTS—OPPORTUNITY FOR LOCAL FACTORIES.

Consul General W. H. Michael, of Calcutta, furnishes the following information concerning the utilization of cotton seed in India:

The fact that India exported last year 219,537 tons of cotton seeds, and that this tonnage represents only 10 per cent of the seeds produced annually in India, has caused an agitation on the subject of cotton-seed oil factories. The director of commercial intelligence of India calls attention to the great profit that awaits the enterprising man who puts in such mills. There would not only be a ready market for the oil, but also the oil cake.

The rapid increase in the amount of cotton seed exported from India during the last four years is attributed by the inspector-general of agriculture in India to the remunerative price received for cotton-seed oil and oil cake in European markets. The oil cake sells in England for feed for stock at a higher price than the seed itself commands in India. For example, cotton-seed sells in India for about 75 cents per hundredweight, and after the oil is expressed the cake sells in England for considerably more than that figure. Linseed sells for about \$2.80, ground nuts for about \$2.35, and gingelly or sesamum about \$2.30 per hundredweight. The inspector-general expresses the opinion that cotton-seed oil would be a good substitute

for any of the vegetable oils used in India for cooking purposes, and would be much cheaper. He says:

There is opportunity in India to educate the farmer to use cotton-seed oil cake as cattle food, and when once its value is established there will be a constant demand for it at both large and small pressing mills. Experiments have been conducted at the Hissar cattle farm (government farm) and cotton-seed cake produced no bad results. The cattle were regularly worked throughout the whole period and maintained their condition as well as other worked cattle usually employed on the farm.

The inspector-general refers to the immense production of cotton-seed oil and by-products in the United States, describes the American methods of manufacture and treatment, and then recommends that India follow the example of that country.

CHANCE FOR AMERICAN MACHINERY—ONLY ONE NATIVE MILL.

As the United States manufactures the simplest and best crushers for reducing the cotton seeds and the best machinery for expressing and treating the oil, why should not our manufacturers of such machinery take advantage of the opening without delay, and thereby be able to hold it forever? A half dozen young men familiar with the business might get together at once and put in a cotton-seed oil plant, and thus secure to our manufacturers of cotton-seed oil machinery this trade.

A trade paper published in Calcutta states that there is at present only one regular cotton-seed oil mill in all India, and that is in Burma. This mill, which is located at Myingyan, on the Irrawaddy River, was established in 1900 with a capital of \$50,000. The mill consumes cotton seed produced in Burma and Bengal and Madras provinces, and does a business exceeding \$40,000 annually. In this connection the journal calls attention, as has been done by this office in several reports, to the opportunity presented in India for the profitable investment of money in an up-to-date cotton-seed oil mill. A writer in the paper referred to says:

It is almost a shame to see so much cotton seed go out of the country when it could be "expressed" here. The edible oil would be largely consumed throughout India, and the inferior grades would be used for the manufacture of soap. The oil cake would be used for food for cattle and for fertilizer.

CHINA.

TSINGTAU.

LOCAL PRODUCTS OCCUPY THE MARKET—OPENING FOR OIL MACHINERY.

Writing from Tsingtau, June 10, 1907, Consul Wilbur T. Gracey reports that cotton-seed oil and its products are not used to any great extent in the colony of Kiaochow. He continues:

Small quantities of cotton are grown in the hinterland at Kaumi, but only to a very limited extent. Cotton-seed oil is thus manufactured in a crude manner, but is never made in sufficient quantities to affect even the local trade. No cotton-seed machinery is used, the oil being extracted by small locally manufactured hand mills.

Cotton-seed oil would come into competition here with the locally manufactured peanut, walnut, bean, and castor oils, which are largely

exported from this port. The price of these products fluctuates greatly. During the month of May the average price of the various articles competing with cotton-seed products in the markets of Tsingtau were, in gold: Bean oil, \$0.0065; peanut oil, \$0.05; bean cake, \$0.015; peanut cake, \$0.0125.

EXPORTS OF OILS.

It is impossible to obtain statistics as to the quantity manufactured and value of sales. During the year 1906, 4,582 tons of oil were hauled over the Shantung Railway toward the coast, and the table of comparative exports of the Imperial Chinese customs for the years 1902-1906 shows that the following quantities were exported from Tsingtau by foreign vessels:

[One picul=133½ pounds.]

Articles.	1902.	1903.	1904.	1905.	1906.
	<i>Piculs.</i>	<i>Piculs.</i>	<i>Piculs.</i>	<i>Piculs.</i>	<i>Piculs.</i>
Bean cake.....	4,613	3,536	5,421	338,563	172,372
Castor oil.....		574	372	1,658	1,413
Bean oil.....	55,827	70,968	102,287	99,106	109,895
Peanut oil.....	71,519	95,133	83,325	67,572	81,657

During the year 1906 the following quantities, in addition, were exported by Chinese seagoing junks: Bean oil, 109,311 piculs; peanut oil, 75,987 piculs.

Cotton-seed cake or meal comes into direct competition as feed-stuff and fertilizer with bean cake, which is one of the principal exports of Shantung Province and Kiaochow colony.

Cotton-seed oil does not come into competition with the local oils, probably owing to its higher cost. There is no discrimination on the part of either the Chinese or German colonial governments against cotton-seed oil.

There is undoubtedly an opportunity of introducing machinery for the manufacture of bean and nut oil in this district and the province of Shantung, but it must be introduced by special agents sent out by the machinery firms, who are able to explain their goods to the local tradesmen, show them the method of using, the saving in cost of labor, the excess of oil extracted by the use of modern machinery, and must, furthermore, sell on long credits or with little or no commissions until the machines are once introduced and appreciated by the natives.

PHILIPPINE ISLANDS.

MANILA.

COTTON-SEED PRODUCTS NOT USED—NATIVE VEGETABLE OILS.

Mr. N. B. McCoy, acting collector of customs at Manila, under date of June 10, 1907, makes the following report in relation to cotton-seed products in the Philippine Islands:

No cotton-seed oil, cotton-seed cake or meal, nor cotton-seed linters are used in the Philippine Islands. If imported, cotton-seed oil

would come in direct competition with coconut and certain other vegetable oils. Coconut oil is of local production and of large consumption here. It is worth about 1.40 pesos to 1.45 pesos per gallon (70 to 72½ cents).

Practically no commercial fertilizers are used, and cattle are fed, with the exception of those belonging to the Government and the American colony, entirely upon green fodder. So far as known no cotton-seed products have ever been imported into the Philippine Islands. There is, of course, no discrimination on the part of the local government against any of these products.

BRAZIL.

RIO DE JANEIRO.

COTTON OIL AS FOOD—IMPORTATION COMPARED WITH OLIVE OIL.

There is a first-class market for cotton-seed oil in Brazil, states Consul-General G. E. Anderson, of Rio de Janeiro, who says it is a market that is growing rapidly and promises much. The consul-general, in a report dated October 1, 1907, continues:

How much the continued development of the cotton-growing industry in the country is to interfere with this trade remains to be seen, but the indications are that the demand for olive oil and cotton-seed oil will increase in even greater proportion than the home supply of cotton-seed products. The uses of cotton-seed oil are various, corresponding with those common in the United States. Oils are popular in foods among the European-born population of the country, especially among the Italians of Sao Paulo, and the American product seems to be preferred.

Of olive oil the imports into Brazil in 1906 aggregated 2,399 metric tons (metric ton=2,204.6 pounds), valued at the exchange equivalent of about \$812,225. Of this amount, representing a decrease of about 8 per cent as compared with the imports of the year previous, Portugal furnished about half, Italy about a quarter, and Spain and France practically all of the balance. So far as I can learn this oil was almost altogether the pure olive product, though it is possible that there was some mixing done and some of the imports were of the mixed class. The retail price of the article is high, owing both to the high duty and to general business conditions in Brazil, so that the consumption of pure olive oil is not great, comparatively, when the fondness of the people for oil products is considered.

DUTIES ON COTTON-SEED AND OLIVE OIL.

The imports of cotton-seed oil as such are not differentiated in the customs returns from other vegetable oils, but they were about \$410,000, and of this the United States sent over 80 per cent. The local importers of the American product express themselves as very well satisfied with the nature of their trade and its prospects. The use of cotton-seed oil, of course, is much more extensive than the imports measure. In 1905 Brazil exported considerable cotton-seed oil, but

sent none abroad last year, the home market taking at a good price all that was offered. As between olive oil and cotton-seed oil, conditions generally, including tariff rates, are decidedly in favor of the cotton-seed product. A local importer of American cotton-seed oil has prepared a statement of the duties on the two products now actually charged, as follows:

100 barrels of cotton-seed oil = 5,000 gallons = 17,184 kilos net, at 200 reis per kilo.....	3,430\$890
Charge for statistics.....	28000
	3,438\$890
Of this 50 per cent gold equals.....	1,718\$400 and paper, 1,720\$400
Add 2 per cent for port works.....	137\$470
	1,855\$870
1,855\$870 gold equals £208 15s. 8d., which, at £15 1s. 16d., is.....	3,326\$970
Total duty on 5,000 gallons.....	5,047\$870
Duties per gallon, reis 1\$000, or about 30.25 cents American gold. 100 barrels of olive oil = 5,000 gallons = 17,184 kilos; 17,184 kilos, at 400 reis per kilo.....	6,875\$900
Charge for statistics.....	28000
	6,875\$900
Of reis 6,875\$900 there is 35 per cent in gold, which amounts to.....	2,406\$110
Add 2 per cent port charges.....	27\$940
	(Brazilian gold) 2,681\$050
Which equals £301 12s. 4d., and, at £15 1s. 16d., equals.....	4,806\$840
Add 65 per cent of 6,875\$900 payable in paper.....	4,698\$490
	9,275\$330
Total duties on 5,000 gallons.....	9,275\$330
Duty per gallon, reis 1\$855, or 55.7 cents American gold.	

SHIPPING AND MARKET REQUIREMENTS.

In the above calculations no difference in the weight of olive oil and cotton-seed oil was noted, the difference, if any, being very slight. Cotton-seed oil at present is sold surprisingly close to the figures for olive oil, and the advantage of handling it is evident. The olive oil is handled very largely in the original packages as shipped from Portugal and Italy and common in the United States. The cotton-seed oil is imported largely in casks and bottled or tinued here. The tariff advantage of this plan is great, the tariff on the article in casks being net and on that in packages gross. All shipments are admitted only after careful Government analysis and investigation, both more or less expensive.

American exporters desiring to get into the market here can do so to advantage only after taking the matter up carefully with Brazilian importers and being prepared to suit the nature and conditions of their shipments to the Brazilian market. This is true of all food products imported into Brazil. Only those familiar with local conditions, local requirements, and the inspection laws of Brazil can advantageously import. Quotations based upon cost f. o. b. American port will probably be found the most acceptable.

UNITED STATES.

EXPORTS OF COTTON-SEED PRODUCTS.

FOREIGN CONSUMERS OF AMERICAN SEED, OIL, AND CAKE.

The following table shows the value of cotton-seed products exported to the several countries during the calendar years ended December 31, 1906 and 1907:

Whither exported.	1906.		1907.	
	Quantity.	Dollars.	Quantity.	Dollars.
Cotton-seed oil (gallons):				
United Kingdom.....	2,947,113	1,026,632	3,618,692	1,457,501
Austria-Hungary.....	1,645,089	599,247	174,377	70,015
Belgium.....	945,145	305,845	889,993	354,345
France.....	7,914,292	2,844,063	5,809,064	2,073,125
Germany.....	4,353,545	1,414,905	3,652,879	1,594,055
Italy.....	1,283,410	497,115	1,718,327	740,386
Netherlands.....	12,976,717	4,236,038	12,125,167	5,222,681
Other Europe.....	1,214,462	447,668	1,977,329	806,901
British North America.....	1,068,408	402,748	1,380,107	651,632
Central American States and British Honduras.....	92,230	39,550	114,655	63,128
Mexico.....	2,554,613	787,918	3,096,040	1,101,560
Cuba.....	481,137	219,392	585,509	241,732
Other West Indies and Bermuda.....	1,047,025	414,233	892,190	487,871
Argentina.....	200,901	78,575	214,184	109,628
Chile.....	659,449	249,917	1,245,438	599,168
Other South America.....	98,252	49,357	260,859	100,374
British Australasia.....	410,448	162,439	546,337	257,138
Other Asia and Oceania.....	10,711	4,297	44,145	24,242
British Africa.....	13,279	5,403	12,774	7,187
Other Africa.....	131,363	53,452	170,839	84,614
All other Africa.....	247,973	92,562	572,794	232,446
Total.....	40,297,852	13,993,431	39,108,869	16,949,149
Oil cake (pounds):				
United Kingdom.....	146,219,989	1,749,358	134,810,745	1,683,119
Belgium.....	54,142,355	672,856	28,802,447	377,381
Denmark.....	412,768,057	5,465,140	516,775,520	6,415,146
France.....	16,696,593	198,880	17,459,608	208,943
Germany.....	367,625,064	4,784,526	395,411,558	5,131,864
Netherlands.....	82,898,390	1,070,050	55,103,137	699,508
Other countries.....	18,133,145	229,448	36,069,732	497,750
Total.....	1,127,882,583	14,165,268	1,183,433,747	15,011,721
Cottolene, etc. (pounds):				
United Kingdom.....	16,122,065	1,094,318	22,524,177	1,780,980
Germany.....	4,839,302	342,345	3,477,724	272,337
Netherlands.....	6,768,557	477,903	5,376,312	476,375
Other Europe.....	8,631,221	586,061	7,440,708	601,169
Mexico.....	3,722,930	666,379	6,094,838	513,556
Cuba.....	17,628,344	1,089,471	21,661,772	1,893,863
British East Indies.....	368,733	27,768	1,781,563	156,004
Other countries.....	7,550,920	516,833	12,120,065	1,057,161
Total.....	71,667,072	4,801,078	83,410,209	6,849,445
Cotton seed (pounds)	20,215,735	245,920	15,970,925	194,745
RECAPITULATION.				
Cotton-seed oil (gallons).....	40,297,852	13,993,431	39,108,869	16,949,149
Oil cake (pounds).....	1,127,882,583	14,165,268	1,183,433,747	15,011,721
Cottolene, etc. (pounds).....	71,667,072	4,801,078	83,410,209	6,849,445
Cotton seed (pounds).....	20,215,735	245,920	15,970,925	194,745
Total.....	33,203,697			39,005,090

VALUES OF FOREIGN COINS AND CURRENCIES.

[As given by the Director of U. S. Mint and published by Secretary of the Treasury Jan. 1, 1908.]

COUNTRIES WITH FIXED CURRENCIES.

Countries.	Monetary unit.	Value in U. S. gold.	Coins.
Argentina.....	Peso.....	\$0.965	Gold—argentine (\$1.824) and 1 argentine; silver—peso and divisions.
Austria-Hungary.....	Crown.....	.203	Gold—10 and 20 crowns; silver—1 and 5 crowns.
Belgium.....	Franc.....	.193	Gold—10 and 20 francs; silver—5 francs.
Brazil.....	Milreis.....	.546	Gold—5, 10, and 20 milreis; silver—1, 1 and 2 milreis.
British N. A. (except Newfoundland).....	Dollar.....	1.00	
British Honduras.....	do.....	1.00	
Chile.....	Peso.....	.265	Gold—escudo (\$1.825), doubloon (\$1.65), and condor (97.30); silver—peso and divisions.
Colombia.....	Dollar.....	1.00	Gold—condor (99.647) and double condor; silver—peso.
Costa Rica.....	Colon.....	.485	Gold—2, 5, 10, and 20 colons (\$9.307); silver—5, 10, 25, and 50 centimos.
Denmark.....	Crown.....	.208	Gold—10 and 20 crowns.
Ecuador.....	Sucre.....	.487	Gold—10 sucres (\$1.8665); silver—sucre and divisions.
Egypt.....	Pound (100 piasters).....	4.943	Gold—5, 10, 20, and 50 piasters; silver—1, 2, 5, 10, and 20 piasters.
Finland.....	Mark.....	.193	Gold—10 and 20 marks (\$1.93 and \$3.859).
France.....	Franc.....	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Germany.....	Mark.....	.248	Gold—5, 10, and 20 marks.
Great Britain.....	Pound sterling.....	4.868	Gold—sovereign (45 and half sovereign).
Greece.....	Drachma.....	.193	Gold—5, 10, 20, 50, and 100 drachmas; silver—5 drachmas.
Haiti.....	Gourde.....	.965	Gold—1, 2, 5, and 10 gourdes; silver—gourde and divisions.
India.....	Pound sterling.....	4.866	Gold—sovereign (45); silver—rupee and divisions.
Italy.....	Lira.....	.193	Gold—5, 10, 20, 50, and 100 lire; silver—5 lire.
Japan.....	Yen.....	.498	Gold—5, 10, and 20 yen; silver—10, 20, and 50 sen.
Liberia.....	Dollar.....	1.00	
Mexico.....	Peso.....	.498	Gold—5 and 10 pesos; silver—dollar or peso and divisions.
Netherlands.....	Florin.....	.402	Gold—10 florins; silver—2, 1 florin, and divisions.
Newfoundland.....	Dollar.....	1.014	Gold—\$2 (\$2.027).
Norway.....	Crown.....	.208	Gold—10 and 20 crowns.
Panama.....	Balboa.....	1.00	Gold—1, 2, 5, 10, and 20 balboas; silver—peso and divisions.
Peru.....	Libra.....	4.866	Gold—1 and 1 libra; silver—sol and divisions.
Philippine Islands.....	Peso.....	.50	Silver—peso, 10, 20, and 50 centavos.
Portugal.....	Milreis.....	1.08	Gold—1, 2, 5, and 10 milreis.
Russia.....	Ruble.....	.515	Gold—5, 7, 10, and 15 rubles; silver—5, 10, 15, 20, 25, and 100 copecks.
Spain.....	Peseta.....	.193	Gold—25 pesetas; silver—5 pesetas.
Sweden.....	Crown.....	.208	Gold—10 and 20 crowns.
Switzerland.....	Franc.....	.193	Gold—5, 10, 20, 50, and 100 francs; silver—5 francs.
Turkey.....	Piaster.....	.044	Gold—25, 50, 100, 250, and 500 piasters.
Uruguay.....	Peso.....	1.064	Gold—peso; silver—peso and divisions.
Venezuela.....	Bolivar.....	.193	Gold—5, 10, 20, 50, and 100 bolivars; silver—5 bolivars.

COUNTRIES WITH FLUCTUATING CURRENCIES.^a

Country and monetary unit.	Oct. 1, 1906.	Jan. 1, 1907.	Oct. 1, 1907.	Jan. 1, 1908.
Bolivia:				
silver boliviano.....	78.5	51.0	49.9	42.9
Central America:				
silver peso.....	48.5	51.0	49.9	42.9
China:				
Amoy tael.....	73.0	81.6	81.8	70.4
British dollar.....	52.3	55.0	53.8	46.3
Canton tael.....	79.2	83.3	81.5	70.2
Chefoo tael.....	76.0	79.9	78.2	67.3
Chinkiang tael.....	77.6	81.6	79.9	68.8
Fuchau tael.....	73.5	77.3	73.6	61.9
Hankwan (customs) tael.....	80.8	85.0	83.2	71.6
Hankow tael.....	74.3	78.2	76.5	63.9
Hongkong dollar.....	52.3	55.0	53.8	46.3
China—Continued.				
Kiaochow tael.....	77.0	81.0	79.2	68.2
Mexican dollar.....	52.6	56.4	54.2	46.6
Nankin tael.....	75.6	82.7	80.9	69.7
Newchwang tael.....	74.5	78.4	76.7	66.0
Ningpo tael.....	76.4	80.3	78.6	67.7
Peking tael.....	77.5	81.5	79.7	68.6
Shanghai tael.....	72.6	76.3	74.7	61.3
Swatow tael.....	73.4	77.2	75.5	65.0
Takau tael.....	79.9	84.1	82.3	70.8
Tientsin tael.....	77.0	81.0	79.2	68.2
Persia:				
Silver krân.....	8.9	9.4	9.2	7.9
Strait Settlements:				
Silver dollar.....	52.3	56.8	54.8	46.8

^aThe rupee, \$9.3244, 15-to the sovereign, constitutes the money of account.

^bSeventy-five centigrams fine gold.

^cCoins of silver-standard countries are valued by pure silver content at average market price of silver for the three months preceding date of circular issued by United States Treasury Department.

CONSULAR AND TRADE PUBLICATIONS.

The publications made up chiefly of reports from United States consular officers in foreign countries include the following:

COMMERCIAL RELATIONS, being the annual reports of consular officers on the commerce, industries, navigation, etc., of their districts.

REVIEW OF WORLD'S COMMERCE, being a summary of the annual reports contained in COMMERCIAL RELATIONS.

DAILY CONSULAR AND TRADE REPORTS, issued daily, except Sundays and legal holidays, mailed gratuitously to commercial and industrial organizations, manufacturers, exporters, and others.

MONTHLY CONSULAR AND TRADE REPORTS, compiled from the daily, and issued every month with index.

SPECIAL CONSULAR REPORTS, on particular subjects, made in pursuance to instructions from the Departments of State and of Commerce and Labor.

Until July, 1903, all Consular Reports were issued by the Bureau of Foreign Commerce of the Department of State; from that date until June, 1905, they were issued by the Bureau of Statistics of the Department of Commerce and Labor, with which the Bureau of Foreign Commerce of the Department of State was consolidated July 1, 1903; since July 1, 1905, they have been issued by the Bureau of Manufactures, Department of Commerce and Labor. For details of these publications, and the reports remaining for distribution, address: "Chief, Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C."

The publication of reports on specific subjects, in separate form, was begun in 1880. The editions of many of them are exhausted. The following titles are available for distribution:

Vol. 22 (1907).—Part I. Gas and Oil Engines.

Vol. 26 (1905).—Briquettes as Fuel in Foreign Countries.

Vol. 27 (1905).—Markets for Agricultural Implements and Vehicles.

Vol. 32 (1904).—Foreign Markets for American Fruits.

Vol. 33 (1907).—Cotton-Seed Products in Foreign Countries.

Vol. 40 (1907).—Motor Machines.

Foreign Markets for Sale of American Cotton Products.

Cotton Fabrics in British India and The Philippines.

Leather and Boots and Shoes in European Markets.

England's Cotton Industry.

Tariff series:

No. 1. Tariffs on Leather and its Manufactures.

No. 2. Tariffs on Agricultural and Animal Products.

No. 3. Tariffs on Machinery, Machine Tools, and Vehicles.

No. 4. Conventional Tariff of Service, based on Treaties with Great Britain, France, and Italy.

No. 5. Commercial Agreement between the United States and Germany.

No. 6. Customs Tariff of France.

A few copies of reports made by special agents on trade conditions in the countries visited by them are also available, as follows:

Argentina.

Asiatic Turkey.

Brazil.

Central America and West

Cost of South America.

China.

Cuba.

India.

Japan and Korea.

"Trade with China" is a pamphlet of 110 pages, illustrated, with an introductory chapter on Packing. It is compiled from reports made by special agents which were printed in Daily and Monthly Consular and Trade Reports. A few copies are available.

Of the MONTHLY CONSULAR REPORTS, many numbers are exhausted or so reduced that the Department is unable to accede to requests for copies. Of the publications available for distribution, copies are mailed to applicants without charge. In view of the scarcity of certain numbers, the Department will be grateful for the return of any copies of the Monthly or special reports which recipients do not care to retain. Upon notification of willingness to return such copies, franking labels to be used in lieu of postage in the United States, the Philippine Islands, Hawaii, and Porto Rico will be forwarded.

Persons receiving CONSULAR REPORTS regularly, who change their addresses, should give the old as well as the new address in notifying the Bureau of the fact.

All communications relating to CONSULAR REPORTS should be addressed, "Chief, Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C."

CONSULAR FEES.

RATES PRESCRIBED BY THE PRESIDENT.

Following is the tariff of fees prescribed by the President, under the act for the reorganization of the consular service, to be charged by consular officers of the United States. All consular charges must be in strict accordance with and be collected in gold or its equivalent, and no fee or compensation will be collected for any service not covered by this tariff. American vessels and seamen are exempted by law from the payment of consular fees. Foreign-built vessels, unregistered, owned by American citizens, are not exempt from the payment of the prescribed fees.*

Nature of service.	Fee.
<i>Miscellaneous services.</i>	
1. Certificate to invoice, including declaration, in triplicate or quadruplicate, covering either importations or transit shipments, including any additional declaration or certificate not otherwise provided for which is required by law or regulations for use in connection with the entry of the wares or the forwarding of the same in bond.....	\$2.50
2. Invoice of returned American goods.....	1.00
3. Extra certificates or declarations as above described, including immigrant's oath (Form No. 128), when issued without an invoice certificate, each.....	1.00
4. Certificate to extra copies of invoices, each.....	1.00
5. Certificate of disinfection, in triplicate or quadruplicate.....	2.50
6. Landing certificate, including oaths of master and mate, and the complete execution of the certificate.....	2.50
7. Sealing cars coming from Canada or Mexico, for each manifest in quadruplicate with the consul's certificate, including sealing of each car, vessel, bale, barrel, box, or package.....	1.00
8. Issuing a passport—Form No. 9.....	1.00
9. Visiting a passport—Form No. 10.....	1.00
10. Visiting a Chinese passport or certificate.....	1.00
11. Marriage certificate, in duplicate, Form No. 87.....	1.00
12. For taking into possession the personal estate of any citizen who shall die within the limits of a consulate, inventorying, selling, and finally settling and preparing or transmitting, according to law, the balance due thereon, \$2 for each \$100 of value or fraction thereof. If part of such estate shall be delivered over before final settlement, \$1 for each \$100 of value or fraction thereof to be charged on the part so delivered over as is not in money, and \$2 for each \$100 of value or fraction thereof on the gross amount of the residue. If among the effects of the deceased are found certificates of foreign stock, loans, or other property, \$1 for each \$100 of value or fraction thereof on the amount thereof. No charge will be made for placing the official seal upon the personal property or effects of such deceased citizen, or for breaking or removing the seals.	
13. For each certificate of protection, semsar, or certificate of employment issued at Tangier.....	2.00
<i>Services to vessels and seamen.</i>	
14. Bill of health, in duplicate.....	5.00
15. Supplemental bill of health, in duplicate.....	2.50
16. For receiving and delivering ship's register and papers, including consular certificates, as prescribed in Form Nos. 13 and 14, \$1 for each 100 tons or fraction thereof, registered measurement (net), of the vessel for which the service is performed, if under 1,000 tons; but for American vessels running regularly by weekly or monthly trips, or otherwise, to or between foreign ports, this tonnage fee will not be charged for more than four trips in a year; and tonnage fees shall not be exacted for any vessel touching at or near ports in Canada on her regular voyage from one port to another within the United States, unless some official service required by law shall be performed.	

* Foreign war vessels are exempt from the payment of fees for bills of health.

Nature of service.	Fee.
<i>Services to vessels and seamen—Continued.</i>	
17. And for every additional 100 tons net or fraction thereof.....	\$0.50
18. Shipping or discharging seamen, including the certificates thereof attached to crew list and shipping articles and given to seamen.....	2.00
19. Authentication of copies of protests or other necessary documents for vessels or seamen not otherwise provided for.....	2.00
20. Preparation and acknowledgment for vessels or seamen of any oath or declaration for which a form is given in the Consular Regulations, or a similar necessary service not otherwise provided for.....	2.00
21. Preparation and execution for vessels or seamen of any certificate for which a form is given in the Consular Regulations, or similar necessary services not otherwise provided for.....	2.00
22. Orders or letters for vessels or seamen for which forms are given in the Consular Regulations, or other similar necessary service not otherwise provided for.....	2.00
23. Recording, when necessary, for vessels or seamen any document covered by the provisions of the Consular Regulations, for every hundred words or fraction thereof.....	.50
24. Noting marine protest—Form No. 37.....	2.00
25. Extending marine protest—Form No. 38.....	3.00
If it exceed two hundred words, for every additional one hundred words.....	.50
26. Protest of master against charters or freighters—Form No. 39.....	2.00
27. Clearance when issued by the consul, as at free ports.....	2.00
28. Attending an appraisement of vessel's goods or effects for each day's attendance.....	5.00
29. Attending sale of vessel's goods, for each day's attendance during which the sale continues.....	5.00
30. Attendance at a shipwreck, or for the purpose of assisting a ship in distress, or of saving wrecked goods or property, over and above traveling expenses, whenever the consul's interposition is required by the parties interested, for each day.....	5.00
<i>Notarial and other services.</i>	
31. Administering an oath and certificate thereof.....	2.00
32. Administering oath and preparing passport application.....	1.00
33. Acknowledgment of a deed or power of attorney, or similar service, including one or more signatures, with certificate thereof.....	2.00
34. Administering any and all oaths required to be made by pensioners and their witnesses in the execution of their pension vouchers, or certifying to the competency of a local official before whom the same were executed.....	No fee.
35. Acknowledgments connected with the transfer of United States bonds.....	No fee.
36. Administering oaths to or taking acknowledgments of officials or employees of the United States Government in connection with their official business or accounts.....	No fee.
37. For rendering notarial services to officials of foreign governments who render gratuitously reciprocal courtesies to American diplomatic and consular officers.....	No fee.
38. Certifying to official character of a foreign notary or other official.....	2.00
39. For taking depositions, executing commissions or letters rogatory, where the record of testimony, including caption and certificate, does not exceed 500 words.....	10.00
For each additional 100 words of fraction thereof.....	.50
The foregoing fee shall be in addition to the administration of the oath and all services of the consul as commissioner, but shall not include services of clerk, stenographer, or typewriter, which shall be additional at the rate prescribed herein for copying.	
40. Copies:	
For the first hundred words or fraction.....	.50
For every additional hundred words or less.....	.25
41. Translations: for every one hundred words or fraction.....	.50
42. Additional fee for all services contemplated by fees numbered 31, 32, 33, 38, 39, when rendered elsewhere than at the consular office at the request of the interested parties, for each hour or fraction thereof.....	1.00
In connection with any service rendered outside of the consular office at the request of private individuals, the exact amount of the expenses actually and necessarily incurred by the person rendering the service shall be collected from the persons for whom the service is performed in addition to the fee or fees prescribed therefor, and a note of the amount shall be made on the margin of the fee book and fee return opposite the entry of the service and fee, but no amount in excess of the fee or fees prescribed and such actual and necessary expenses shall be charged or accepted.	

* Executive order of December 21, 1906, prescribes that no fee shall be charged for the affidavit of temporary stay of owner of sealskin garment entering the United States from Canada.

2006

END OF
TITLE